

MiniPurge 介面單元 (MIU/d) 使用手冊

ML303



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1 規格表

請參閱系統隨附的測試表、檢查表以及設定表。
請參考組裝圖以獲取尺寸、重量以及電力額定功率的資訊。

2 一般資訊

應用適宜性

- MiniPurge 介面單元 (MIU) 已通過認證，可於非礦業 (地表作業) 的危險地點 (含可燃氣體、蒸氣或粉塵的環境) 使用。
- MIU 能夠放置的危險地點為第一區與第二區 (Zone 1, 2) 的瓦斯環境和 / 或第二十一區與第二十二區 (Zone 21, 22) 的粉塵環境；亦或一級第一分類與第二分類 (Class I, Division 1, 2) 的瓦斯環境和 / 或二級第一分類與第二分類 (Class II, Division 1, 2) 的粉塵環境。
- MiniPurge 介面單元可用於大多數瓦斯或粉塵類別的危險地點。但是有一些 MIU 的相關設備，如：本質安全的發訊電路，以及其他含開關裝置的防火外殼等，可能還是被限制歸類在其所屬類別內。務必要確認這類裝置隨附的證明文件，以確保裝置的適用性。
- 就像所有用於危險 / 分級區域的設備一樣，安裝和保養此設備時，也務必要遵守危險地點設備的本地作業和安裝實作規範。只有熟知危險地點安裝電氣設備之規定的人員，才能進行本設備的安裝。
- MIU 主要是使用壓縮空氣來控制。在操作壓縮惰性氣體 (如：氮氣) 的場所作業時，作業人員必須採取適當的預防措施，以避免累積的惰性氣體對健康造成危害。請參閱操作氣體的控制有害健康物質 (COSHH) 資料表或參閱相關國家規定。
- MiniPurge 介面單元的結構含有以下原料。如果周遭環境含有會對這些原料產生不良影響的物質，請諮詢 EXPO 以了解處理方式：
 - 不鏽鋼
 - 黃銅
 - 鋁 (Ex d / Xp 的外殼含鎂量 < 1 %)
 - 亞硝酸鹽 (「O」型環)
- 本設備是專為在一般工業的環境溫度條件、濕度條件以及震動條件下的使用所設計。如果處在會對本設備造成壓力的非一般工業環境條件下，請在安裝本設備之前先諮詢 EXPO。

系統說明

- MIU 的 EXPO 系列是專為廣泛應用和多種外殼所設計。這個系列會搭配一個系統使用，該系統提供 MIU 必要的訊號，用以產生「無電壓 / 乾觸點」警報訊號，並將電源切換至加壓外殼。
- 所有單元都安裝於防火 / 防爆外殼內。蓋子和外殼之間的接點會形成螺紋狀的火焰途徑。

- 每個 MIU 能添加的項目有限 (如需詳細資訊，請參閱組裝圖章節)。訂購額外項目時，要注意有以下限制：
 - 項目之間的最小空間；
 - M20 或 ½" NPT 需要 35 mm (1.38")
 - M25 或 ¾" NPT 需要 40 mm (1.58")
 - 項目不應放置於過度接近內部表面 (平行於項目的螺紋) 的一邊，這麼做的話會在進行螺紋項目加工時受到切割。
- 為符合美國 (NEC) 標準或是符合雙重標準符合性，必須使用 NPT 項目。
- 為符合 IEC / ATEX，可能要使用公制或 NPT 項目。絕對不可以在相同的外殼上混用 NPT 和公制項目。
- 標準的 MIU 會有 NPT 項目。
- 另外還有使用本質安全或強化安全開關系統來控制 MIU 功能的 MIU 版本可供選擇。這些版本僅供特別訂單採購。如需詳細資訊，請聯繫我們的營業據點。

MIU 的標準系列包含 3 種類型：

MIU/dA

AMU-9AA1-510

電源接觸器： 4 PNO / 20 A / 440 Vac*

警報開關： SPCO 3 A / 250 Vac

如有需要可使用 110 Vac 線圈進行電超控

AMU-9AA1-511

電源接觸器： 4 PNO / 20 A / 440 Vac*

警報開關： SPCO 3 A / 250 Vac*

如有需要可使用 230 Vac 線圈進行電超控

AMU-9AA1-518

電源接觸器： 4 PNO / 20 A / 440 Vac*

警報開關： SPCO 3 A / 250 Vac*

如有需要可使用 24 Vac 線圈進行電超控

MIU/dX

AMU-AAA1-610

電源接觸器： 4 PNO / 20 A / 440 Vac*

單繼電器： 4 PNO / 5 A / 250 Vac*

警報開關： SPCO 3 A / 250 Vac*

110 / 230 Vac 雙電壓供應

MIU/dT

AMU-BAA1-610

電源接觸器： 4 PNO / 35 A / 600 Vac*

單繼電器： 4 PNO / 5 A / 250 Vac*

警報開關： SPCO 3 A / 250 Vac*

110 / 230 Vac 雙電壓供應

*IEC 額定值如上所示，如需包含 UL 和 CSA 的額定值詳細資訊，請參閱組裝圖。

3 安裝

- MiniPurge 介面單元適合安裝在危險 / 分級地點。MIU 適合在以下區域分級中使用。請注意，歐洲 / 美國區域分級的瓦斯類別各不相同。

IEC / 歐洲	第一區、第二區 第二十一區、第二十二區	瓦斯類別 IIC 粉塵
美國 / 加拿大	一級，第一分類和 second 分類 二級，第一分類和 second 分類	瓦斯類別 B、C 和 D 粉塵類別 E、F 和 G

- MiniPurge 介面單元應該要根據相關標準 (如：EN 60079-14、NEC 500 或 NEC 505) 和 / 或任何有效的當地作業規範來進行安裝。
- 依照 ATEX / IEC 的規範，不阻礙火焰途徑的距離為：
 - 瓦斯類別 IIC 至少 40 mm (1⁵/₈")。
 - 瓦斯類別 IIB 至少 30 mm (1 11/64")
 - 瓦斯類別 IIA 至少 10 mm (17/64")
- 電纜接頭、導管或其他電纜項目裝置都應經過適當認證，確認其適用於電纜和使用情況，並且要依照製造商的指示進行安裝。EN 60079-14 包含如何選擇合適電纜接頭的指導說明。
- MiniPurge 介面單元搭配 MiniPurge 吹掃和加壓系統使用時，應依照本手冊的說明進行連接。
- MiniPurge 介面單元的外部接地應使用最低至少 4 mm² / 12 的 AWG 導體進行接線。
- 建議使用直徑 6 mm / ¼" 抗折管路和相應的 1/8" NPT 接頭 (未隨附) 來連接 MIU 和 MiniPurge 系統。
若要訂購連接兩個單元的合適接頭和管路，請參閱「備件」-「額外項目」。
- NPT 分接電纜項目為 MiniPurge 介面單元的標準配備。
- 在 MIU/dA 中，電源接觸器直接由氣動 (輸入) 作動器操作。
- 在 MIU/dX 中，115 V 或 230 V 電源供應各自連接 N 端子和 115 或 230 端子的外部電壓。



圖. 1 MIU/dA 建議接頭



圖. 2 MIU/dA

- 在 MIU/dT 中，115V 或 230 V 電源供應各自將外部電壓連接至 L 和 N 端子，並且使用電壓選擇器開關選擇適當的供應電壓。
- 請參閱本手冊組裝圖章節中，欲安裝單元的佈線示意圖。另請參閱「專案專屬資料」以取得額外資訊。

4 試運轉

- MIU 安裝完成後，在開始使用之前，應該先檢查電纜接頭、導管、接地和任何其他連接（如：氣動連接）是否已正確安裝。
- 請在蓋子的螺紋表面均勻塗抹一層薄薄的潤滑脂（隨附）。
- 蓋子應正確安裝，並且應固定蓋子鎖定裝置。
- 如果要在危險地點執行試運轉，一定要採取適當的預防措施，以避免發生意外。務必向有關當局申請相關的「熱作許可」或類似許可，並且遵守規定。

MIU 搭配 MiniPurge 控制系統安裝時進行試運轉

- 對 MIU 試運轉需要用到可正常運作的加壓外殼和 MiniPurge 系統。
如需 MiniPurge 系統操作和試運轉的說明，請參閱 MiniPurge 隨附的專用手冊。以下的說明以使用標準洩漏補償 MiniPurge 為例。
- 可以使用以下的方法測試警報 / 已加壓觸點的運作：
- 空氣供應關閉時，A 端子和 C 端子之間應該具有導通性，而 C 端子和 P 端子之間則無導通性。
- 關閉外殼門，然後開啟空氣供應。接著就會開始吹掃，並且 MiniPurge 上的已加壓指示燈應該會從「紅光」轉變成「綠光」。這時 C 端子和 P 端子之間應該具有導通性，而 MIU 的 C 端子和 A 端子之間則無導通性。
- 可以使用以下的方法測試電源切換觸點的操作：
- 空氣供應關閉時，電源切換觸點的電路應為斷路。記得開啟電源供應，這樣需要電源供應的單元才能控制開關（MIU/dX 和 MIU/dT 單元）。
- 關閉外殼門。然後開啟空氣供應。這時吹掃循環應該就會開始。
- 當吹掃循環結束後，電源切換觸點就會通路。這時 MiniPurge 和 MIU 之間兩邊的氣動接頭都會被加壓。
- 確保氣動接頭不會漏氣。
- 最後的檢查事關重大，絕對不能忽視。確認外殼應該已加壓、吹掃循環已結束，並且電源觸點已通路。將通往 MiniPurge 的空氣供應關閉。幾秒鐘之後外殼就會開始失壓，然後接下來
 - MiniPurge 上的已加壓指示燈應該會從「綠光」轉變成「紅光」。
 - 電源觸點應該就會斷路，進而切斷外殼的電源。
 - 這時 A 端子和 C 端子之間應該具有導通性，而 C 端子和 P 端子之間則無導通性。
 - 以上描述是假定 MiniPurge 系統設定為「警報和跳脫」（切斷）而非「只有警報」。
- 如果最後的檢查已經順利結束，請開啟通往 MiniPurge 空氣供應。

5 維護

EXPO 建議根據現場條件而定，最短每 6 個月以及 / 或最長每 2 年就要進行下述的例行性維護：

- 檢查外殼、相關電纜接頭和導管的情況，看看是否有任何受損的跡象。
- 檢查螺紋和蓋子鎖定裝置的情況，看看是否有任何腐蝕或受損的跡象。
- 除了本手冊提及的部分以外，MIU 系統內部沒有可供使用者自行維修的零件。
- 反覆進行指派工作測試以確認系統的正確運作。
- 檢查空氣供應品質 (如果可以) 是否在可接受範圍。
- 確認系統沒有未經授權的修改。
- 確認認證標籤清晰可見，並確認系統規格符合危險地點的需求。

6 故障排除

如遇任何故障問題，請參閱下表以尋找解決方案。

問題	可能的解決方法
警報 / 已加壓觸點無法運作。	<ul style="list-style-type: none">• 檢查 MiniPurge 的氣動接頭是否有洩氣 / 阻塞的情況。• 依照以下方法來檢查氣動饋通的運作：• 旋開 MIU 側面上的饋通作動器空氣接頭，然後手持小型接頭螺絲起子壓下饋通內側的活塞。• 壓下活塞的動作應該會傳到 MIU 內的開關，並且應該能透過導通性測試器觀察到開關的變換動作。
電源開關觸點沒有通路。(MIU/dA 單元)	<ul style="list-style-type: none">• 接觸器是由氣動饋通作動器直接進行操作。接觸器的運作應該依照上述警報觸點的測試方式來進行測試。
電源切換觸點沒有通路 (MIU/dX 和 MIU/dT 單元)。	<ul style="list-style-type: none">• 確認電源有供應至 MIU• 依照上述警報 / 已加壓觸點的測試方法來檢查氣動饋通作動器的運作。• 確認選擇的電壓符合供應電壓• 檢查 MIU 的保險絲。(請參閱電路圖以了解保險絲的額定值。)

7 備件清單

注意：訂購備件時，請註明單元的序號。

項目	零件號碼
<u>dA 型</u>	
接觸器 (110 Vac 線圈) 4 PNO / 20 A / 440 Vac	ECT-T000-064
接觸器 (230 Vac 線圈) 4 PNO / 20 A / 440 Vac	ECT-T000-063
<u>dX 型</u>	
接觸器 (24 Vac 線圈) 4 PNO / 20 A / 440 Vac	ECT-T000-065
繼電器 4 PNO / 5 A / 250 Vac	ECT-T000-025
保險絲總成，250 mA	EFH-0400-001
<u>dT 型</u>	
接觸器 (24 Vac 線圈) 4 PNO / 35 A / 600 Vac	ECT-T000-024
繼電器 4 PNO / 5 A / 250 Vac	ECT-T000-025
保險絲，630 mA	EFU-C006-301
<u>額外項目</u>	
直接安裝套件，僅適用於 dA 和尺寸 1 的 MiniPurge，請確認 訂購的 MIU 有額外的安裝孔 E 和 F	KMP-2600-000
潤滑脂 PCB 10 g 小包裝	S0130/001
dA 專用機械式手動超控	AGM-GM00-016
dX 和 dT 用機械式手動超控。	AGM-GM00-049
電手動超控 UL	MO/UL
電手動超控 ATEX，IEC	MO(BOX) 或 MO(PM)
將 MiniPurge 連接至 MIU 的管路接頭，包含： 4 x 1/8" NPT 至 6mm OD，不鏽鋼材質	KMP-3MIU-S00
不鏽鋼管路 6mm OD，長度 1 m (39")	HTS-0601-500
插頭，1/2" NPT，黃銅材質，Sira 00ATEX1073U	TTP-4400-0B0

8 證書

若要了解使用限制和條件，請參閱本手冊頁末的適用證書：

Sira 02ATEX1129	CE 0518	Ex II 2 G D
	Tamb -20°C +40°C	Ex d IIC T6 Ex tD A21 IP6X T80°C
	Tamb -20°C +55°C	Ex d IIC T5 Ex tD A21 IP6X T95°C
IECEX SIR07.0008	Tamb -20°C +40°C	Ex d IIC T6 Ex tD A21 IP6X T80°C
	Tamb -20°C +55°C	Ex d IIC T5 Ex tD A21 IP6X T95°C
TÜV 12.1464	Tamb -20°C +40°C	Ex d IIC T6
	Tamb -20°C +55°C	Ex d IIC T5

NOIV.E203605* 和 FTRX.E181300*

* 這些證書適用於 MIU/d 上使用的電源互鎖作動器，其上的 UL 標籤已經於組裝時撕除。

9 組裝圖和示意圖

請參閱附件的結構圖：

標題	組裝圖號碼
MiniPurge 介面單元安裝	XBR-MTD0-001
dA 外殼**的 MIU	AMU-9AA1-510
dX 外殼**的 MIU	AMU-AAA1-610
dT 外殼**的 MIU	AMU-BAA1-610
鑰匙機械式氣動手動超控	AGM-GM00-016
MP 至 MIU 尺寸 1 直接連接套件 (dA 專用)	KMP-2600-000
Cat 5 UTP 網路接頭	

** Expo 會根據客戶要求提供這些零件的 AutoCAD.dwg 檔案區塊。這個檔案區塊的目的，是要讓工程師和使用者可以使用 Expo 標準零件快速建構外殼的 GA。



圖 3：已安裝手動超控的 MIU/dA

10 專案專屬資料

以下記錄的是專屬於 MIU/d 所屬專案的組裝圖號碼詳細項目。

	組裝圖號碼	標題
1		
2		
3		
4		
5		
6		

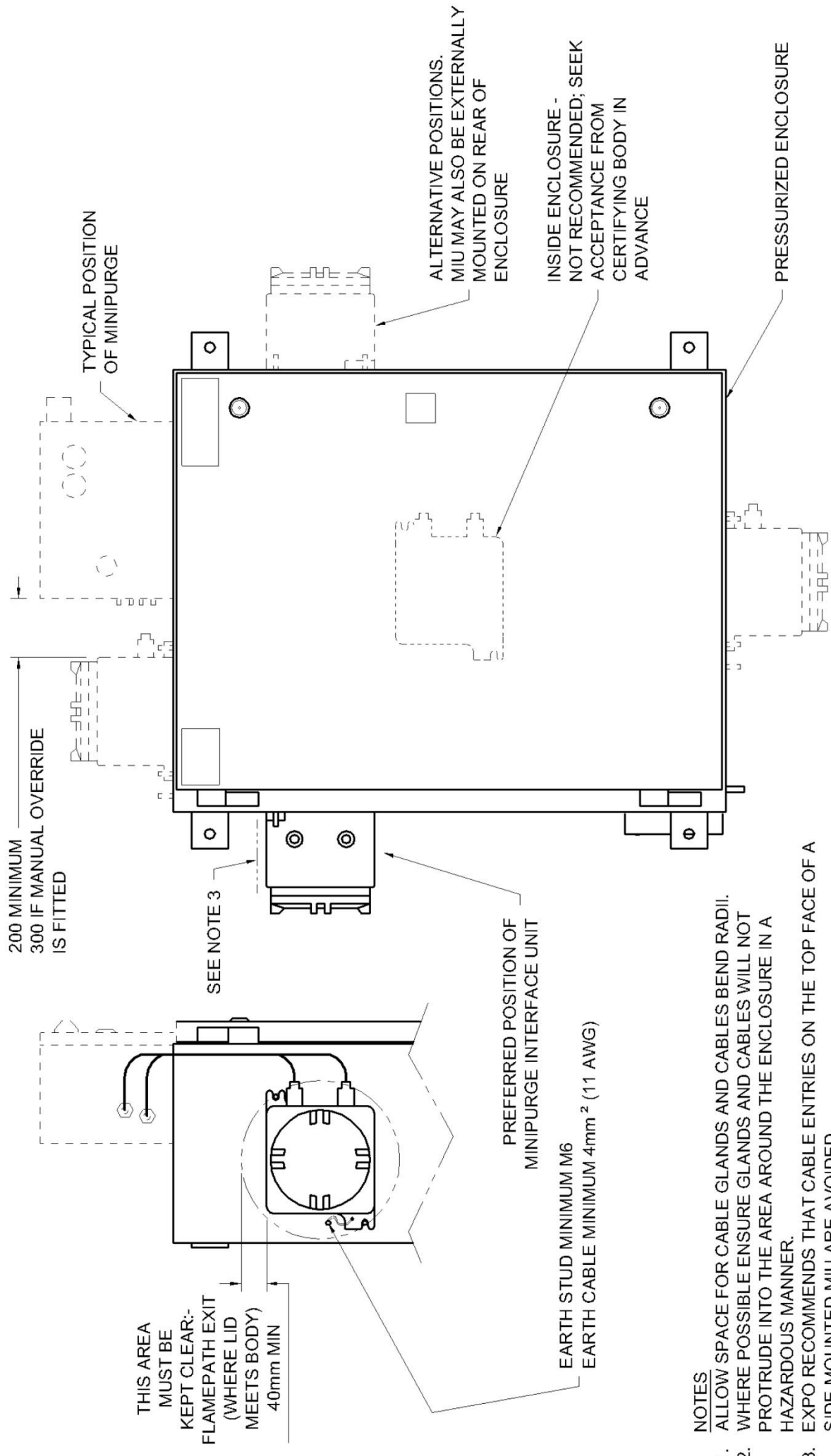
3rd ANGLE
PROJECTION



DIMENSIONS IN mm
DO NOT SCALE

UNSPECIFIED NO DEC PLACE ±0.5
TOLERANCES 1 DEC PLACE ±0.2
2 DEC PLACE ±0.1
FLATNESS TO BE LESS THAN 0.4mm OVER ANY 100mm LENGTH

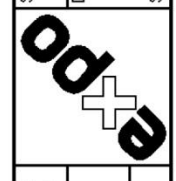
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NOTES

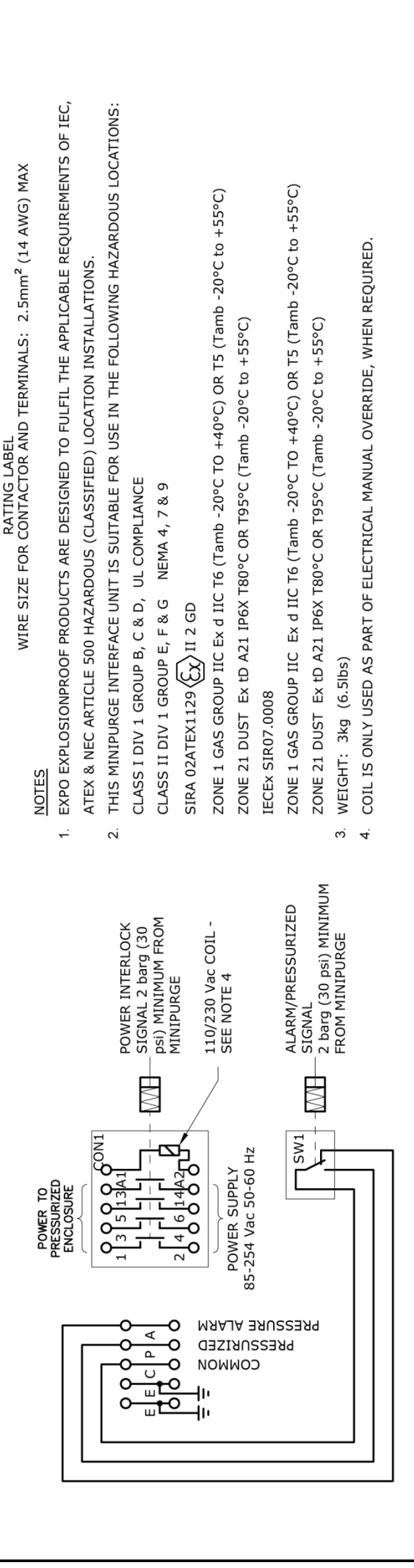
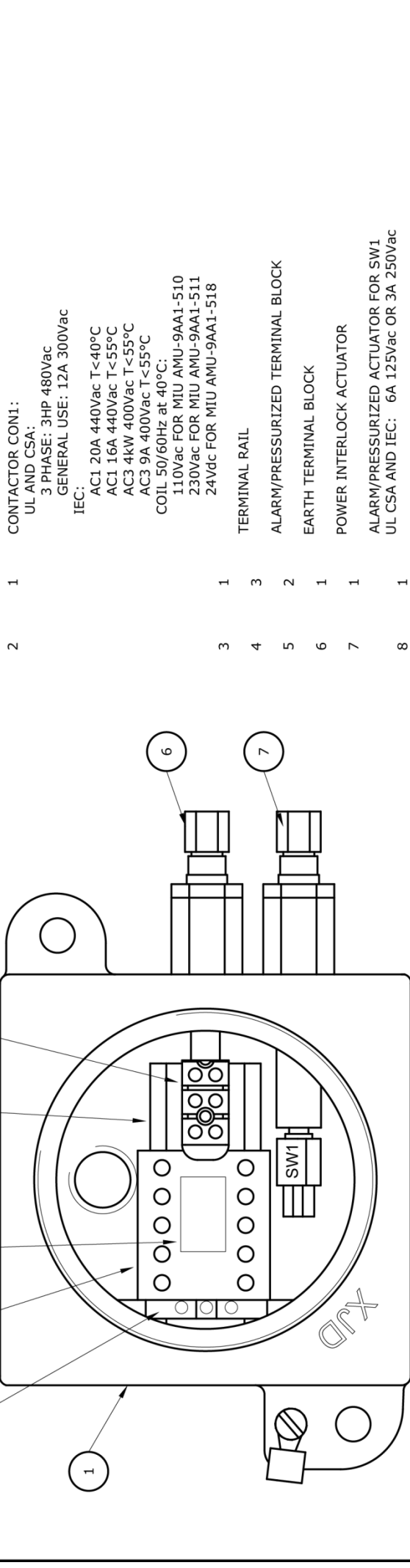
1. ALLOW SPACE FOR CABLE GLANDS AND CABLES BEND RADII.
2. WHERE POSSIBLE ENSURE GLANDS AND CABLES WILL NOT PROTRUDE INTO THE AREA AROUND THE ENCLOSURE IN A HAZARDOUS MANNER.
3. EXPO RECOMMENDS THAT CABLE ENTRIES ON THE TOP FACE OF A SIDE MOUNTED MIU ARE AVOIDED.

APP'D	PA0	ISSUE:	1	2	3	MATERIAL	SURREY KIT7 ORH UNITED KINGDOM		SCALE	NTS
CHK'D	PA0	MOD. No:	DRAWN	4094	5034	FINISH	TITLE		DRAWING No.	XBR-MTD0-001
DR'WN	NRB	DATE:	PA0	13/12/05	7/8/10		MINIPURGE INTERFACE UNIT INSTALLATION		SHEET No.	1 OF 1
		APPROVED:	PA0	PA0	JPdB		CUSTOMER:			
DRAWING STATUS: CERT RELATED										



3rd ANGLE PROJECTION
 DIMENSIONS IN mm
 DO NOT SCALE
 UNspecified NO DEC PLACE ±0.5 TOLERANCES
 1 DEC PLACE ±0.2
 2 DEC PLACE ±0.1
 FLATNESS TO BE LESS THAN 0.4mm OVER ANY 100mm LENGTH

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APP'D	ISSUE:	1	5	6	7	MATERIAL	Expo Technologies Limited			SURREY KT7 0RH UNITED KINGDOM	SCALE	NTS
PA0	MOD. No:	DRAWN	4,763	4,993	6090		MIU IN a BOX				DRAWING No.	AMU-9AA1-510
CHK'D	DATE:	26/05/2004	11/8/09	10/5/12	7/5/14	FINISH	JOB No:			CUSTOMER:	SHEET No.	1 OF 3
DRWN	APPROVED:	PA0	JPdB	SB	SM		DRAWING STATUS: CERT RELATED					



NOTES

1. EXPO EXPLOSIONPROOF PRODUCTS ARE DESIGNED TO FULFIL THE APPLICABLE REQUIREMENTS OF IEC, ATEX & NEC ARTICLE 500 HAZARDOUS (CLASSIFIED) LOCATION INSTALLATIONS.
2. THIS MINIPURGE INTERFACE UNIT IS SUITABLE FOR USE IN THE FOLLOWING HAZARDOUS LOCATIONS:
 CLASS I DIV 1 GROUP B, C & D, UL COMPLIANCE
 CLASS II DIV 1 GROUP E, F & G NEMA 4, 7 & 9
 SIRA 02ATEX1129 Ex II 2 GD
 ZONE 1 GAS GROUP IIC Ex d IIC T6 (Tamb -20°C TO +40°C) OR T5 (Tamb -20°C to +55°C)
 ZONE 21 DUST Ex td A21 IP6X T80°C OR T95°C (Tamb -20°C to +55°C)
 IECEx SIR07.0008
 ZONE 1 GAS GROUP IIC Ex d IIC T6 (Tamb -20°C TO +40°C) OR T5 (Tamb -20°C to +55°C)
 ZONE 21 DUST Ex td A21 IP6X T80°C OR T95°C (Tamb -20°C to +55°C)
 WEIGHT: 3kg (6.5lbs)
 COIL IS ONLY USED AS PART OF ELECTRICAL MANUAL OVERRIDE, WHEN REQUIRED.

WIRE SIZE FOR CONTACTOR AND TERMINALS: 2.5mm² (14 AWG) MAX

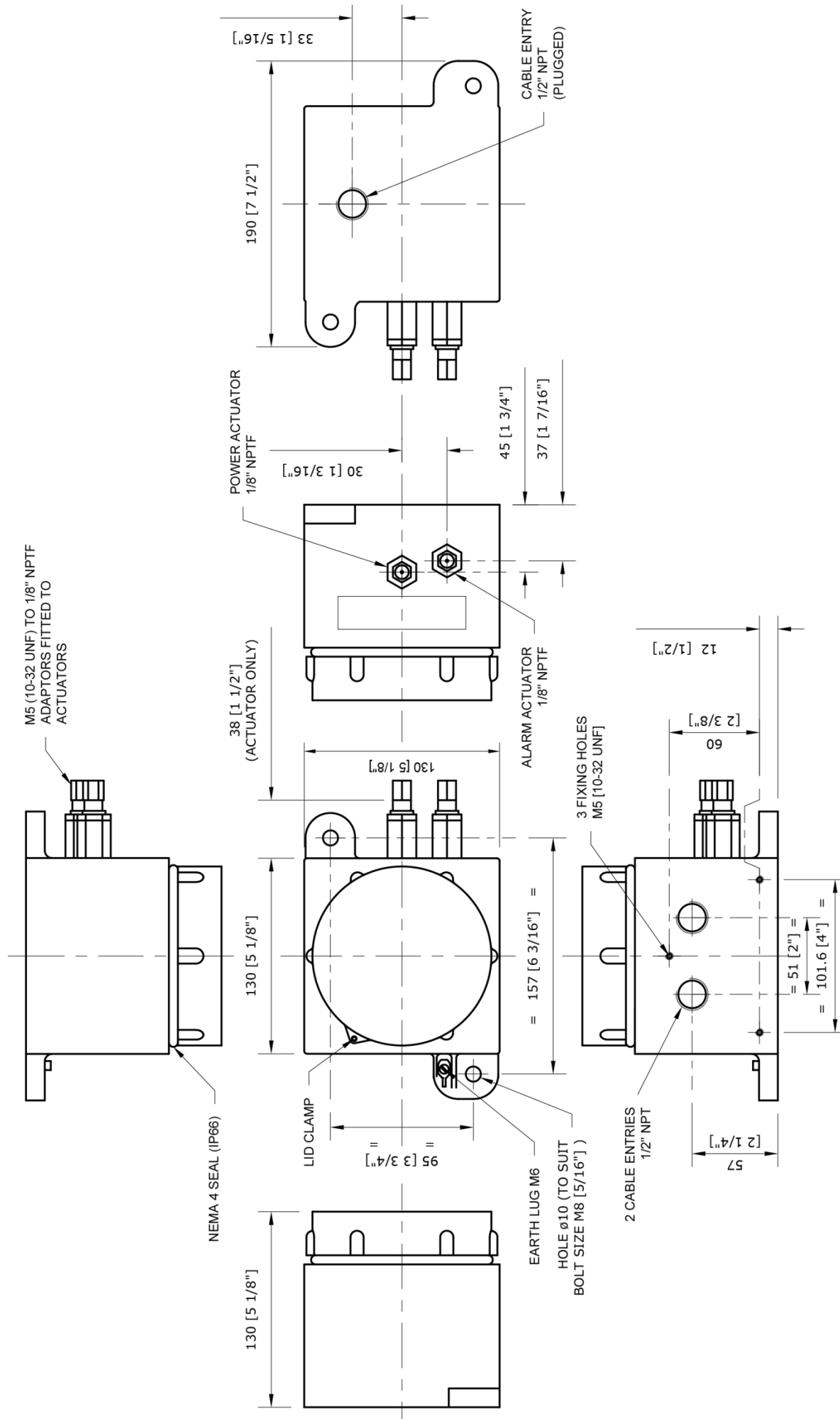
RATING LABEL



3rd ANGLE
PROJECTION

UNSPECIFIED NO DEC PLACE ±0.5
TOLERANCES 1 DEC PLACE ±0.2
2 DEC PLACE ±0.1
FLATNESS TO BE LESS THAN 0.4mm OVER ANY 100mm LENGTH

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APP'D	PAO	ISSUE:	1	5	6	7	MATERIAL	ALUMINIUM	SURREY KT7 0RH UNITED KINGDOM	SCALE	N.T.S	
CHK'D	PAO	MOD. No:	DRAWN	4,763	4,993	6090	FINISH	-	Expo Technologies Limited	DRAWING No.	AMU-9AA1-510	
DRWN	NRB	DATE:	26/05/2004	11/8/09	10/5/12	7/5/14			MIU IN a BOX	SHEET No.	2 OF 3	
		APPROVED:	PAO	JPdB	SB	SM			CUSTOMER:			
		DRAWING STATUS: CERT RELATED										



3rd ANGLE PROJECTION

UNSPECIFIED TOLERANCES
 NO DEC PLACE ±0.5
 1 DEC PLACE ±0.2
 2 DEC PLACE ±0.1

FLATNESS TO BE LESS THAN 0.4mm OVER ANY 100mm LENGTH

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ALLOW SPACE FOR GLANDS, CABLES, PNEUMATIC CONNECTIONS AND PIPES

FIXINGS IN 2 PLACES MAX ø8 [ø5/16"] TO SUIT MOUNTING HOLE ø10 [ø3/8"] IN MIU. SEE NOTE (b)

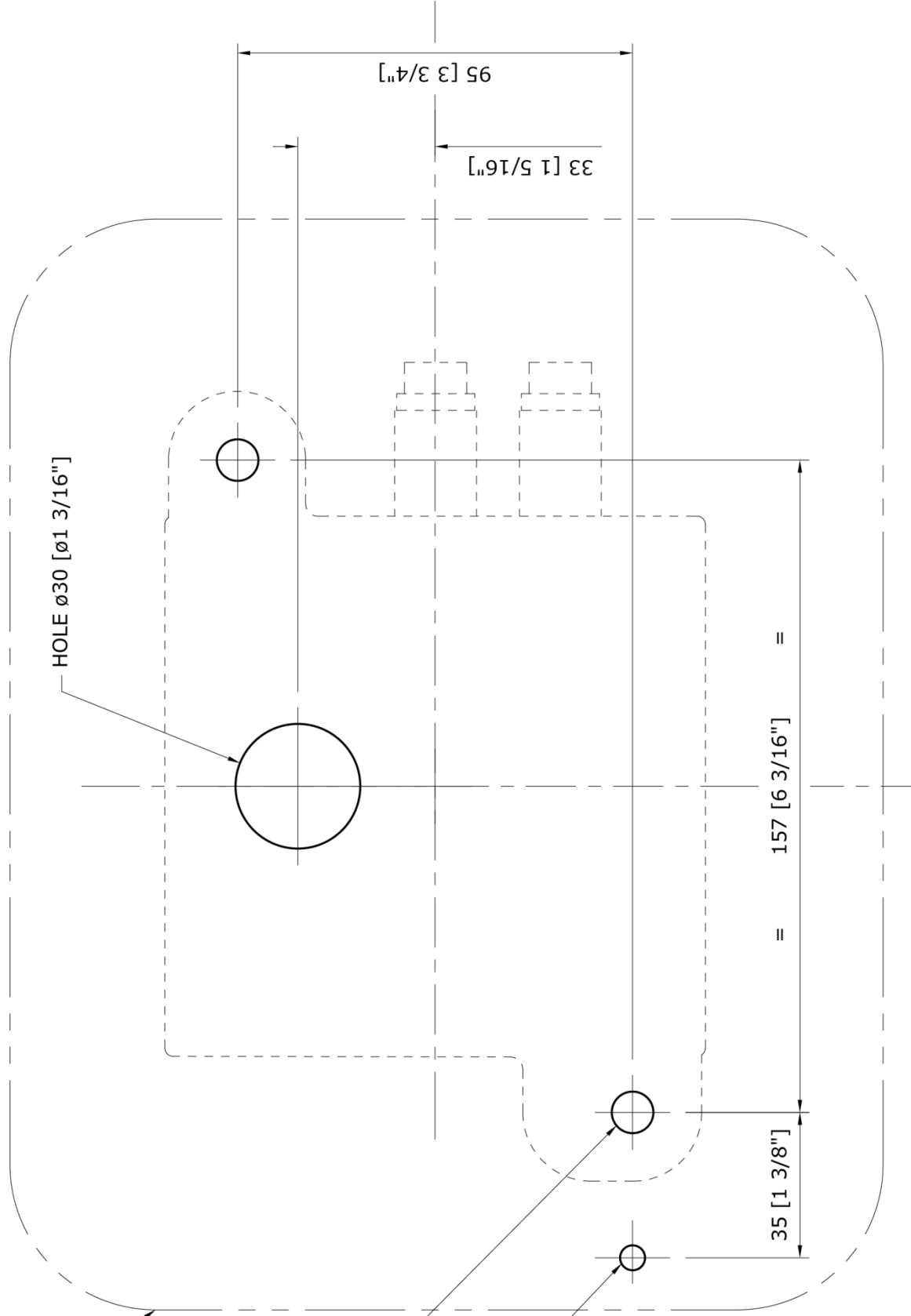
WELDED EARTH STUD WHERE APPLICABLE. SEE NOTE (a)

NOTE:

WHEN FITTED BY EXPO TECHNOLOGIES LTD:

(a) THE EARTH STUD WILL BE M6 x 20 LONG

(b) THE FIXING STUDS WILL BE M8 x 25 LONG



APP'D	PAO	ISSUE:	1	5	6	7	MATERIAL	ALUMINIUM
CHK'D	PAO	MOD. No:	DRAWN	4763	4993	6090	FINISH	-
DRWN	NRB	DATE:	27/05/04	11/8/09	10/5/12	7/5/14		
		APPROVED:	PAO	JpdB	SB	SM		
		DRAWING STATUS:	CERT RELATED					

Expo Technologies Limited	SURREY KT7 0RH UNITED KINGDOM
TITLE	
MIU IN da BOX	
JOB No:	CUSTOMER:

SCALE	N.T.S
DRAWING No.	AMU-9AA1-510
SHEET No.	3 OF 3

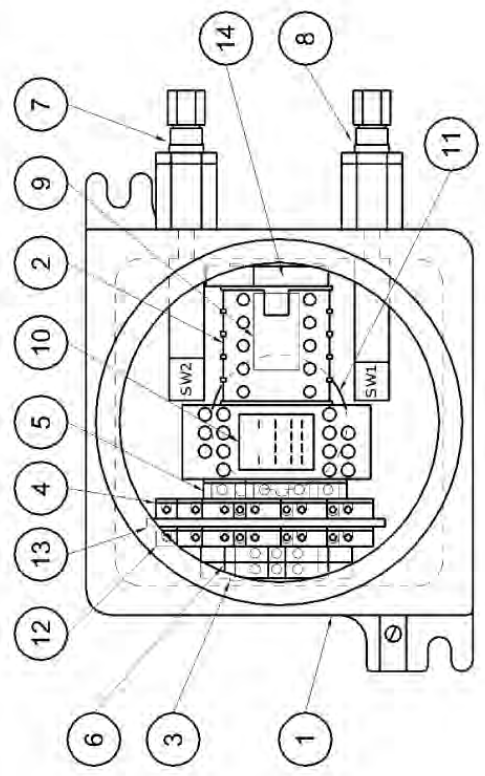


3rd ANGLE PROJECTION

DIMENSIONS IN mm
DO NOT SCALE

UNSPECIFIED NO DEC PLACE ±0.5 TOLERANCES
1 DEC PLACE ±0.2
2 DEC PLACE ±0.1
FLATNESS TO BE LESS THAN 0.4mm OVER ANY 100mm LENGTH

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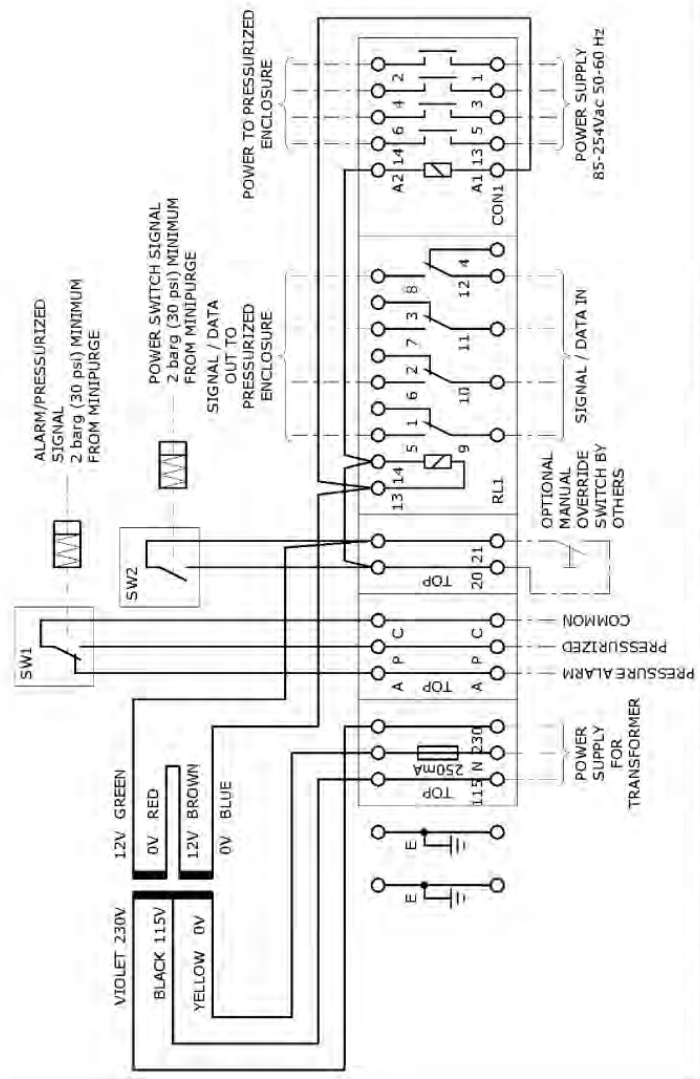
ITEM QTY DESCRIPTION
1 1 Ex d / EXPLOSION PROOF ALUMINIUM HOUSING
2 1 CONTACTOR CON1:
UL AND CSA:
3 PHASE: 3HP 480Vac
GENERAL USE: 12A 300Vac
IEC:
AC1 20A 440Vac T<40°C
AC1 16A 440Vac T<55°C
AC3 4kW 400Vac T<55°C
AC3 9A 400Vac T<55°C
COIL 24Vac 50/60Hz

3 1 TERMINAL RAIL
4 1 TERMINAL BLOCK TRIPLE DECK
5 1 TERMINAL BLOCK DOUBLE DECK
6 2 EARTH TERMINAL BLOCK
7 1 POWER INTERLOCK ACTUATOR FOR SW2
RATING: UL, CSA & IEC: 6A 125Vac / 3A 250Vac
ALARM/PRESSURIZED ACTUATOR FOR SW1
RATING: UL, CSA & IEC: 6A 125Vac / 3A 250Vac
9 1 RATING LABEL
10 1 RELAY RL1
RATING: CONTACTS: AC1 5A 250Vac COIL: 24Vac 50/60Hz
11 1 TRANSFORMER
12 1 FUSE ASSEMBLY FITTED WITH 250mA FUSE
13 1 PARTITION FOR TERMINAL SEPARATION
14 1 END BRACKET

WIRE SIZE FOR CONTACTOR, RELAY AND TERMINALS: 2.5mm² (14 AWG) MAX

NOTES

1. EXPO EXPLOSIONPROOF PRODUCTS ARE DESIGNED TO FULFIL THE APPLICABLE REQUIREMENTS OF IEC, ATEX & NEC ARTICLE 500 HAZARDOUS (CLASSIFIED) LOCATION INSTALLATIONS.
2. THIS MINIPURGE INTERFACE UNIT IS SUITABLE FOR USE IN THE FOLLOWING HAZARDOUS LOCATIONS:
CLASS I DIV 1 GROUP B, C & D, UL COMPLIANCE
CLASS II DIV 1 GROUP E, F & G NEMA 4, 7 & 9
SIRA 02ATEX1129 (II) 2 GD
ZONE 1 GAS GROUP IIC Ex d IIC T6 (Tamb -20°C TO +40 °C) OR T5 (Tamb -20°C to +55°C)
ZONE 2I DUST Ex ID A21 IP6X T80 °C OR T95°C (Tamb -20°C to +55°C)
IECEX SIR07-0008
ZONE 1 GAS GROUP IIC Ex d IIC T6 (Tamb -20 °C TO +40°C) OR T5 (Tamb -20°C to +55°C)
ZONE 2I DUST Ex ID A21 IP6X T80 °C OR T95°C (Tamb -20°C to +55°C)
3. WEIGHT: 3.6kg (8lbs).



APP'D	PA0	ISSUE:	1	2	4	5	MATERIAL	Expo Technologies Limited		SURREY KT7 0RH UNITED KINGDOM	SCALE	NTS
CHK'D	PA0	MOD. No:	DRAWN	4309	4491	4993		MIU IN dX BOX			DRAWING No.	AMU-AAA1-610
DRWN	NRB	DATE:	PA0	MLC	JPdB	SB	FINISH	CUSTOMER:			SHEET No.	1 OF 3
		APPROVED:	PA0	MLC	JPdB	SB					SHEET No. 1 OF 3	
		DRAWING STATUS:	CERT RELATED									

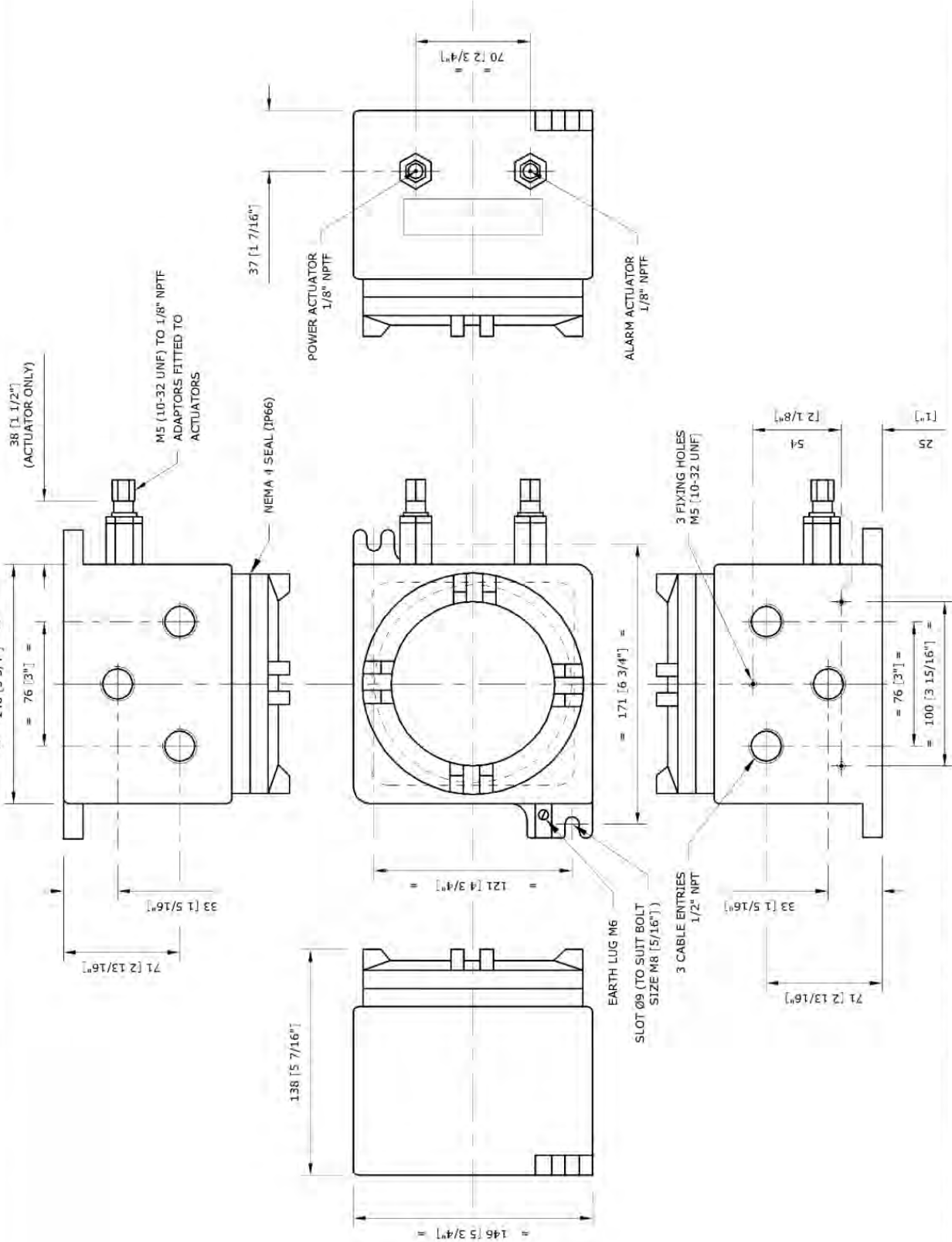


3rd ANGLE
PROJECTION

DIMENSIONS IN mm
DO NOT SCALE

UNSPECIFIED NO DEC PLACE ±0.5
TOLERANCES 1 DEC PLACE ±0.2
2 DEC PLACE ±0.1
FLATNESS TO BE LESS THAN 0.4mm OVER ANY 100mm LENGTH

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APP'D	PAO	ISSUE:	1	3	4	5	MATERIAL	ALUMINIUM	Expo Technologies Limited	SURREY KT7 0RH UNITED KINGDOM	SCALE	N.T.S	
CHK'D	PAO	MOD. No:	DRAWN	4338	4491	4993	FINISH		MIU IN dX BOX		DRAWING No.	AMU-AAA1-610	
DRWN	NRB	DATE:	PAO	MLC	JPdB	SB					SHEET No.	2 OF 3	
		APPROVED:	PAO	MLC	JPdB	SB							
		DRAWING STATUS:	CERT RELATED										

3rd ANGLE
PROJECTION



DIMENSIONS IN mm
DO NOT SCALE

UNSPECIFIED NO DEC PLACE ±0.5
TOLERANCES 1 DEC PLACE ±0.2
2 DEC PLACE ±0.1

FLATNESS TO BE LESS THAN 0.4mm OVER ANY 100mm LENGTH

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ALLOW SPACE FOR GLANDS,
CABLES, PNEUMATIC
CONNECTIONS AND PIPES

FIXINGS IN 2 PLACES
MAX Ø8 [Ø5/16"]
TO SUIT MOUNTING HOLE
Ø10 [Ø3/8"] IN MIU.
SEE NOTE (b)

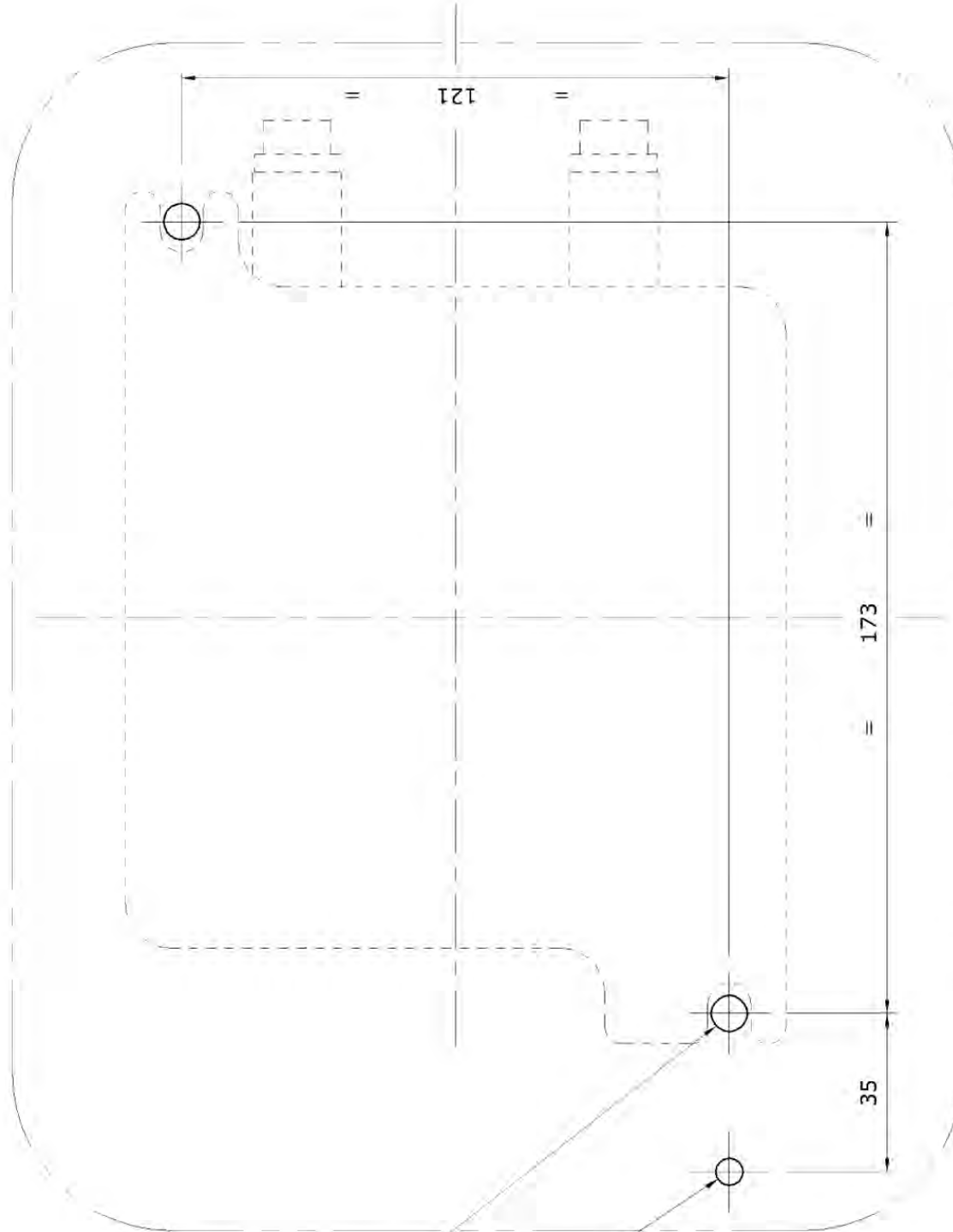
WELDED EARTH STUD
WHERE APPLICABLE.
SEE NOTE (a)

NOTE:

WHEN FITTED BY EXPO
TECHNOLOGIES LTD:

(a) THE EARTH STUD WILL BE
M6 x 20 LONG

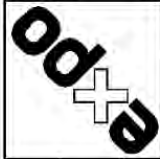
(b) THE FIXING STUDS WILL BE
M8 x 25 LONG



APP'D	PA0	ISSUE:	1	2	4	5	MATERIAL	
CHK'D	PA0	MOD. No:	DRAWN	3894	4491	4993		
DRWN	NRB	DATE:	02/06/04	7/12/04	13/6/08	2/7/10	FINISH	
		APPROVED:	PA0	PA0	JPdB	SB		
		DRAWING STATUS:	CERT RELATED					

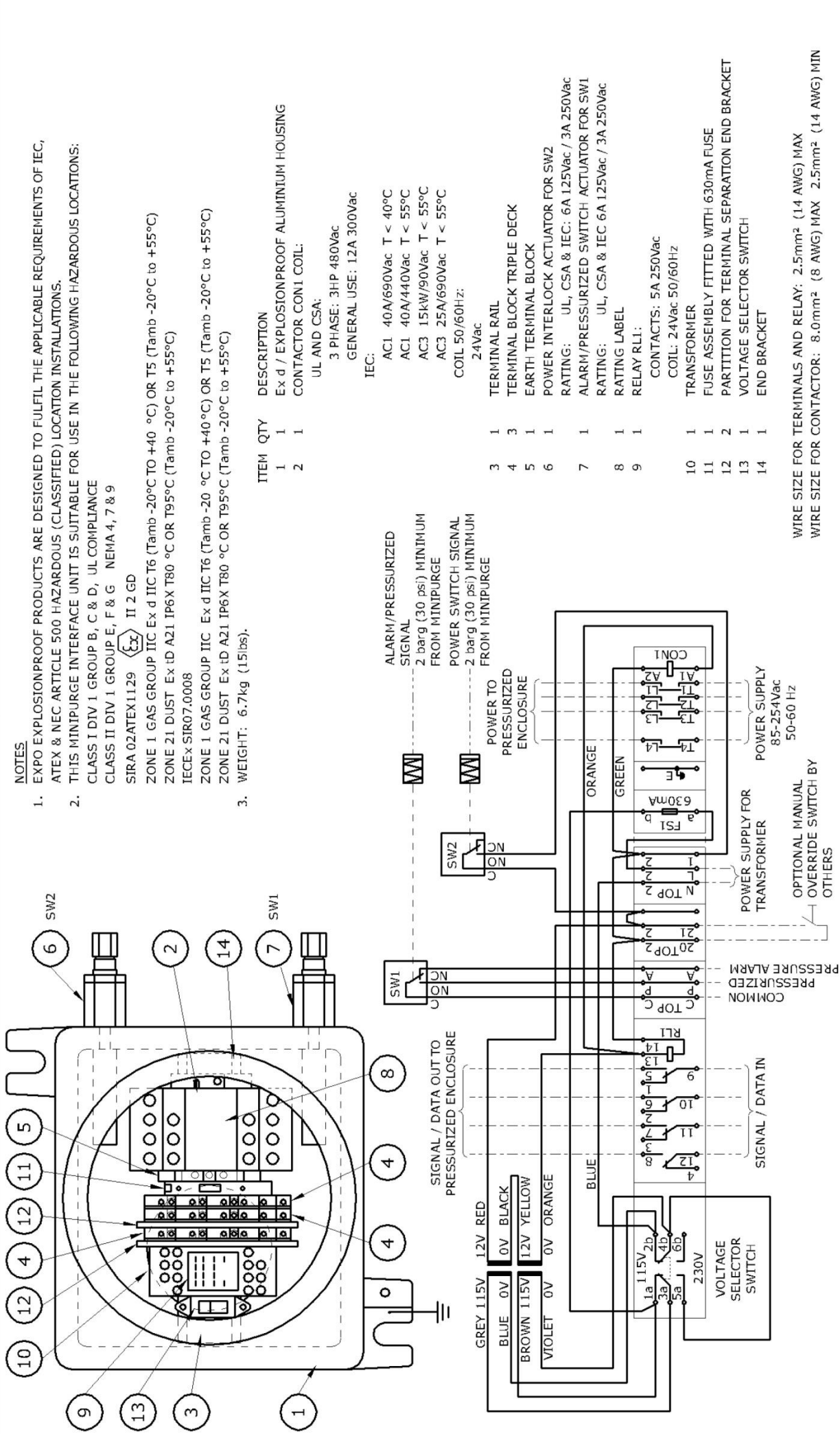
Expo Technologies Limited		SURREY KT7 0RH UNITED KINGDOM	
TITLE		MIU IN dX BOX	
JOB No:		CUSTOMER:	

SCALE	NTS
DRAWING No.	AMU-AAA1-610
SHEET No.	3 OF 3



3rd ANGLE PROJECTION
 DIMENSIONS IN mm
 DO NOT SCALE
 UNSPECIFIED NO DEC PLACE ±0.5
 TOLERANCES 1 DEC PLACE ±0.2
 2 DEC PLACE ±0.1
 FLATNESS TO BE LESS THAN 0.4mm OVER ANY 100mm LENGTH

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- NOTES**
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 2. THIS MINIPURGE INTERFACE UNIT IS SUITABLE FOR USE IN THE FOLLOWING HAZARDOUS LOCATIONS:
 CLASS I DIV 1 GROUP B, C & D, UL COMPLIANCE
 CLASS II DIV 1 GROUP E, F & G NEMA 4, 7 & 9
 SIR A 02ATEX1129 Ex II 2 GD
 ZONE 1 GAS GROUP IIC Ex d IIC T6 (Tamb -20°C TO +40 °C) OR T5 (Tamb -20°C to +55°C)
 ZONE 21 DUST Ex d A21 IP6X T80 °C OR T95°C (Tamb -20°C to +55°C)
 TECEX SIR07.0008
 ZONE 1 GAS GROUP IIC Ex d IIC T6 (Tamb -20 °C TO +40 °C) OR T5 (Tamb -20°C to +55°C)
 ZONE 21 DUST Ex d A21 IP6X T80 °C OR T95°C (Tamb -20°C to +55°C)
 3. WEIGHT: 6.7kg (15lbs).

ITEM	QTY	DESCRIPTION
1	1	Ex d / EXPLOSIONPROOF ALUMINIUM HOUSING
2	1	CONTACTOR CON1 COIL: UL AND CSA: 3 PHASE: 3HP 480Vac GENERAL USE: 12A 300Vac
IEC:		
		AC1 40A/690Vac T < 40°C
		AC1 40A/440Vac T < 55°C
		AC3 15kW/90Vac T < 55°C
		AC3 25A/690Vac T < 55°C
		COIL 50/60Hz:
		24Vac
3	1	TERMINAL RAIL
4	3	TERMINAL BLOCK TRIPLE DECK
5	1	EARTH TERMINAL BLOCK
6	1	POWER INTERLOCK ACTUATOR FOR SW2
		RATING: UL, CSA & TEC: 6A 125Vac / 3A 250Vac
7	1	ALARM/PRESSURIZED SWITCH ACTUATOR FOR SW1
		RATING: UL, CSA & TEC 6A 125Vac / 3A 250Vac
8	1	RATING LABEL
9	1	RELAY RLI: CONTACTS: 5A 250Vac COIL: 24Vac 50/60Hz
10	1	TRANSFORMER
		FUSE ASSEMBLY FITTED WITH 630mA FUSE
11	1	PARTITION FOR TERMINAL SEPARATION END BRACKET
12	2	PARTITION FOR TERMINAL SEPARATION END BRACKET
13	1	VOLTAGE SELECTOR SWITCH
14	1	END BRACKET

WIRE SIZE FOR TERMINALS AND RELAY: 2.5mm² (14 AWG) MAX
 WIRE SIZE FOR CONTACTOR: 8.0mm² (8 AWG) MAX 2.5mm² (14 AWG) MIN

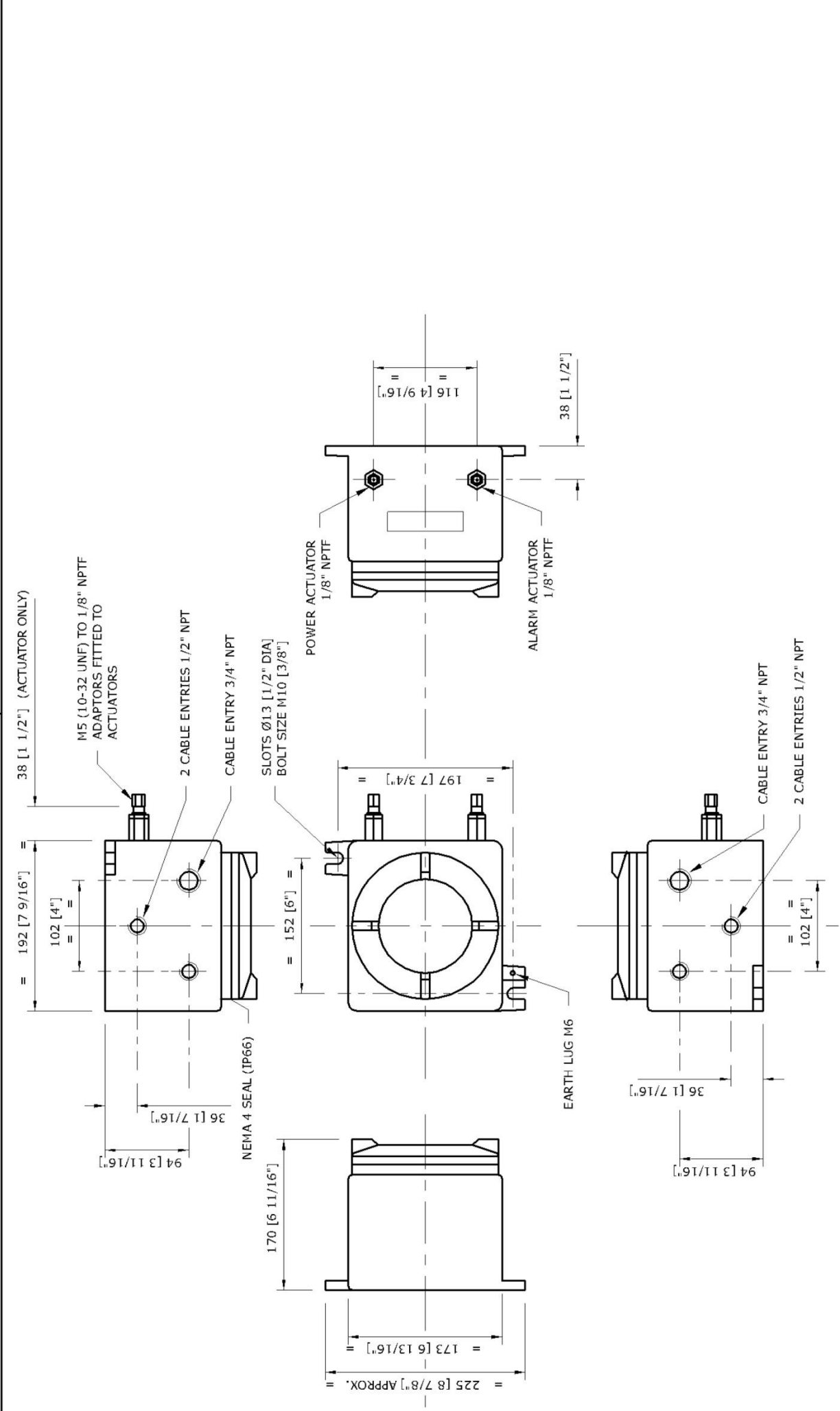
APP'D	PAO	ISSUE:	1	4	5	6	MATERIAL	Expo Technologies Limited		SURREY KT7 0RH UNITED KINGDOM	SCALE	NTS
CHK'D	PAO	MOD. No:	03/06/2004	4519	5386	4993	FINISH	MIU IN dT BOX		DRAWING No. AMU-BAA1-610		
DRWN	NRB	DATE:	PAO	JPdB	JPdB	SB	10/5/12	JOB No:				
		APPROVED:	DRAWING STATUS: CERT RELATED					CUSTOMER:				SHEET No. 1 OF 3



3rd ANGLE PROJECTION

DIMENSIONS IN mm
DO NOT SCALE

UNSPECIFIED NO DEC PLACE ±0.5
TOLERANCES 1 DEC PLACE ±0.2
2 DEC PLACE ±0.1
FLATNESS TO BE LESS THAN 0.4mm OVER ANY 100mm LENGTH



APPD	PAO	ISSUE:	1	3	4	6	MATERIAL	ALUMINIUM		Expo Technologies Limited	SURREY KT7 0RH UNITED KINGDOM	SCALE	NTS
CHK'D	PAO	MOD. No:	DRAWN	4338	4519	4993	FINISH			MIU IN dT BOX		DRAWING No.	AMU-BAA1-610
DR'WN	NRB	DATE:	03/06/2004	1/8/07	22/7/08	10/5/12				JOB No:		SHEET No.	2 OF 3
		APPROVED:	PAO	MLC	JPdB	SB				CUSTOMER:			
		DRAWING STATUS:	CERT RELATED										



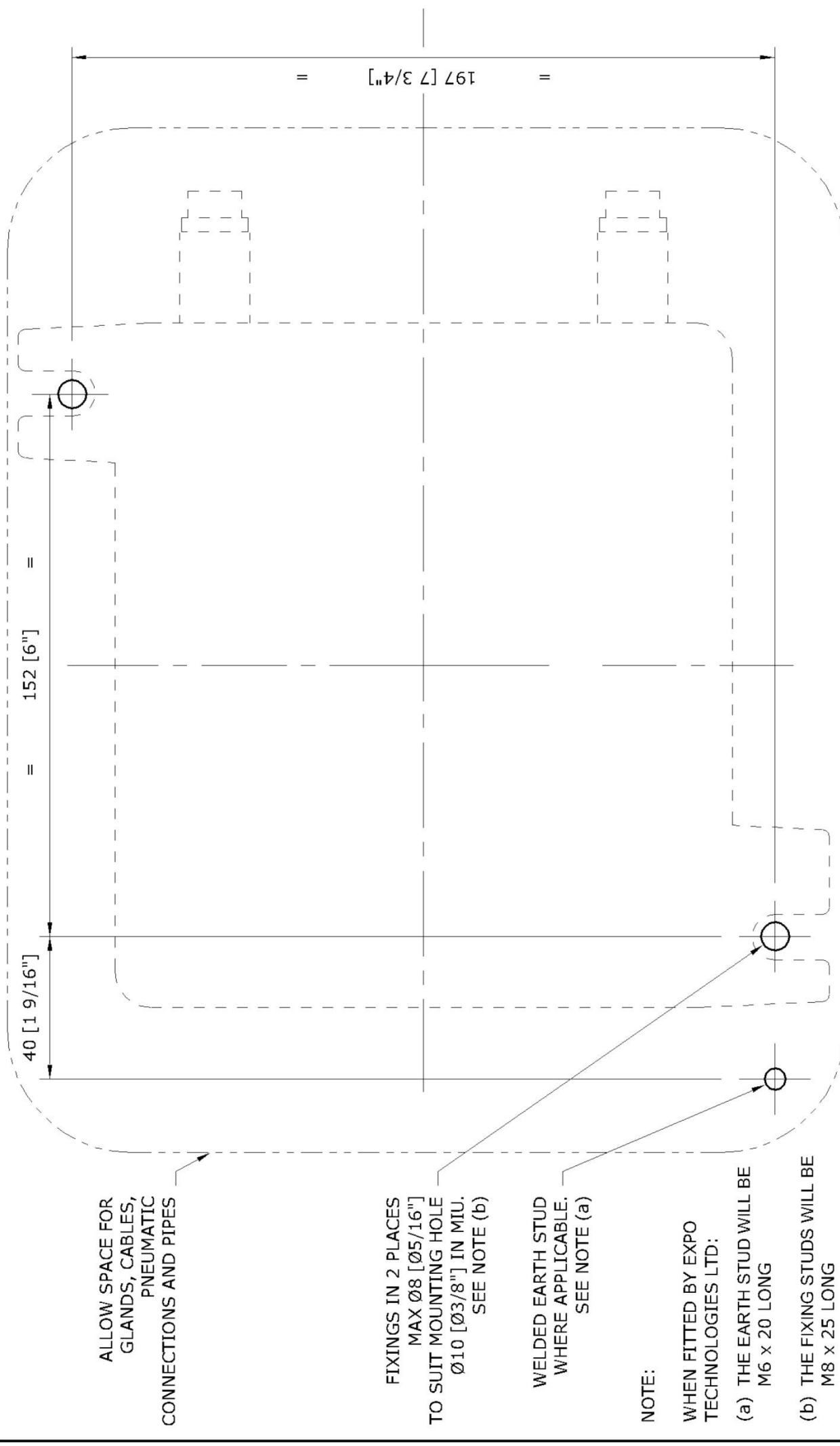
3rd ANGLE
PROJECTION



DIMENSIONS IN mm
DO NOT SCALE

UNSPECIFIED NO DEC PLACE ±0.5
TOLERANCES 1 DEC PLACE ±0.2
2 DEC PLACE ±0.1
FLATNESS TO BE LESS THAN 0.4mm OVER ANY 100mm LENGTH

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ALLOW SPACE FOR
GLANDS, CABLES,
PNEUMATIC
CONNECTIONS AND PIPES

FIXINGS IN 2 PLACES
MAX Ø8 [Ø5/16"]
TO SUIT MOUNTING HOLE
Ø10 [Ø3/8"] IN MIU.
SEE NOTE (b)

WELDED EARTH STUD
WHERE APPLICABLE.
SEE NOTE (a)

NOTE:

WHEN FITTED BY EXPO
TECHNOLOGIES LTD:

(a) THE EARTH STUD WILL BE
M6 x 20 LONG

(b) THE FIXING STUDS WILL BE
M8 x 25 LONG

APP'D	PAO	ISSUE:	1	4	5	6	MATERIAL	Expo Technologies Limited	SURREY KT7 0RH UNITED KINGDOM	SCALE	NTS
CHK'D	PAO	MOD. No:	03/06/04	22/7/08	4/11/11	10/5/12	FINISH	MIU IN dT BOX		DRAWING No.	AMU-BAA1-610
DR'WN	NRB	DATE:	PAO	JPdB	JPdB	SB				JOB No:	
			APPROVED:	DRAWING STATUS: CERT RELATED			CUSTOMER:				
							SHEET No. 3 OF 3				





3rd ANGLE
PROJECTION

DIMENSIONS IN mm
DO NOT SCALE

UNSPECIFIED NO DEC PLACE ±0.5
TOLERANCES 1 DEC PLACE ±0.2
2 DEC PLACE ±0.1
FLATNESS TO BE LESS THAN 0.4mm OVER ANY 100mm LENGTH

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ASSEMBLY INSTRUCTIONS

1. PUSH BUTTON ESW-D020-028 ITEM 1061:
REMOVE PLASTIC CAP FROM END OF ROD. KEEP PLASTIC CAP.
CUT ROD TO DIMENSION 'Z'. DISCARD CUT OFF ROD LENGTH.
2. KEY OPERATED SWITCH ACTUATOR ESW-D020-016 ITEM 1041 SEE DIAGRAM 'A':
REMOVE AND DISCARD KNURLED SWITCH RETAINING RING AND PLASTIC WASHER.
USE SMALL SIDE CUTTERS TO CUT OPEN SWITCH ACTUATOR FRAME AT POSITION 'A' TO REMOVE SPRING, PAWL, THE DRANGE MOULDED PLASTIC COMPONENT AND BRASS INSERT. KEEP SPRING AND PAWL. DISCARD BRASS INSERT.

5. CUT PAWL IN POSITION SHOWN IN DIAGRAM 'B':

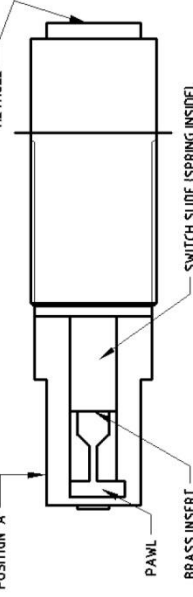
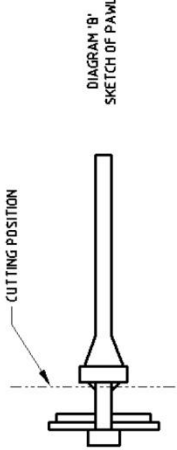
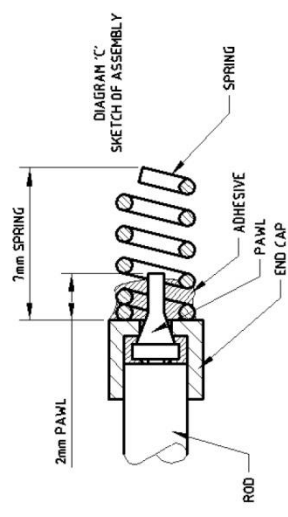


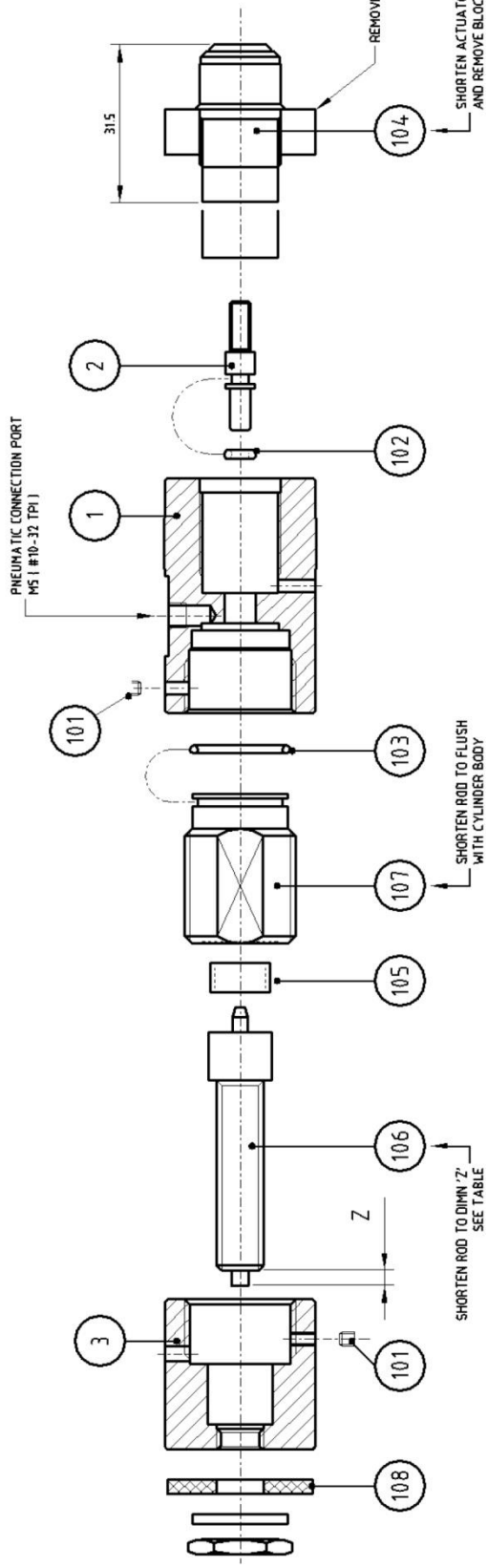
DIAGRAM 'A':
SKETCH OF KEY OPERATED
SWITCH ACTUATOR

3. USE A FINE TOOTHED SAW TO CUT FRAME TO LENGTH SHOWN IN MAIN DRAWING.
4. SCREW KEY ADAPTOR PIN ITEM 21 INTO SWITCH SLIDE. FIT 'O' RING ITEM 102 TO KEY ADAPTOR PIN.

6. WITH REFERENCE TO DIAGRAM 'C':
PUNCH A Ø7 HOLE THROUGH THE PLASTIC CAP. CUT SPRING AND PAWL TO LENGTH.
INSERT THE PAWL THROUGH THE HOLE AND INTO THE SPRING.
USE CYANOACRYLATE ADHESIVE TO COMPLETE ASSEMBLY AS SHOWN.



Item	Description	dia boxes		dx and dt boxes
		AGR-GMH1-116	AGR-GMH1-238	AGR-GMH1-149
1	ACTUATOR BODY			
2	KEY ACTUATOR PIN			
3	ACTUATOR END HOUSING			
101	M3 x 3 SOCKET SET SCREW A2 SS			
102	O RING Ø3.1 x 1.6 SECTION			
103	O RING Ø16.1 x 1.6 SECTION			
104	KEY OPERATED SWITCH ACTUATOR	Modified as shown	Modified as shown	
105	NYLON SPACER			
106	RESET PUSH BUTTON	Modified, dimm Z = 7	Modified, dimm Z = 8	Modified, dimm Z = 3
107	MINI PIN CYLINDER Ø15 BORE x 10	Modified as shown	Modified as shown	
108	CONFORMAL WASHER			



APPD	PA0	ISSUE:	1	8	9	10	MATERIAL
CHKD	PA0	MOD. No:	DRAWN	4-317	4-318	4-913	
DRWN	CDM	DATE:	01.11.2002	29/6/07	2/7/07	3/3/10	FINISH
		APPROVED:	PA0	NRB	PA0	JPB	
		DRAWING STATUS: CERT RELATED					
Expo Technologies Limited SURREY KIT7 0RH UNITED KINGDOM							
KEY OPERATED PNEUMATIC MAN. OVERRIDE							
SCALE 1:1 DRAWING No. AGM-GM00-016 SHEET No. 1 OF 2							

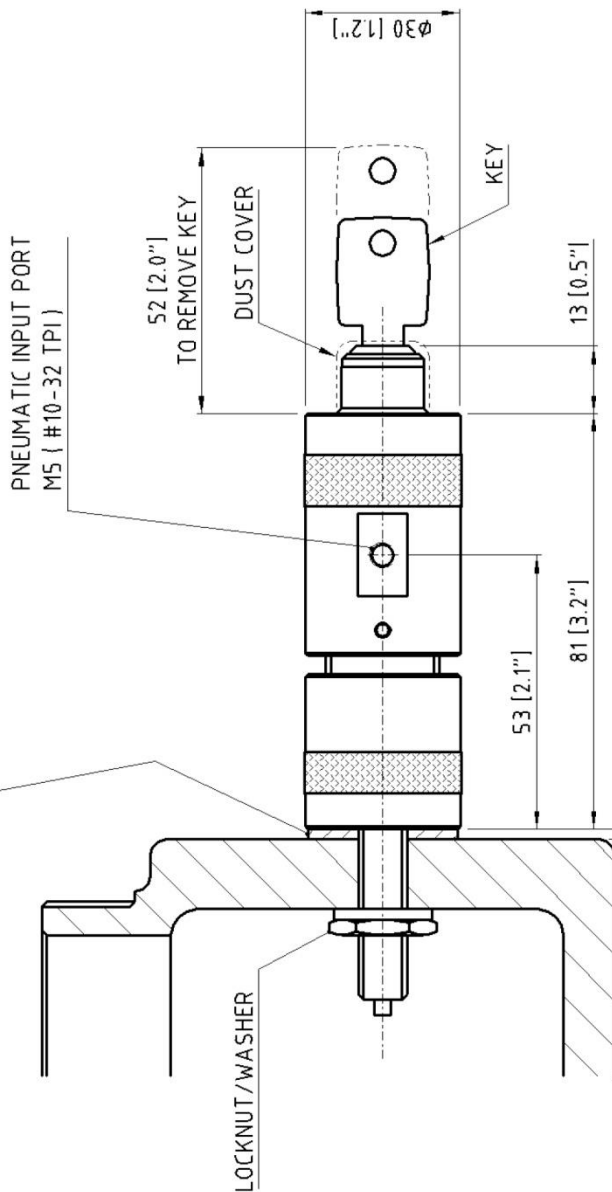
3rd ANGLE PROJECTION

DIMENSIONS IN mm
DO NOT SCALE

UNSPECIFIED NO DEC PLACE ±0.5
TOLERANCES 1 DEC PLACE ±0.2
2 DEC PLACE ±0.1
FLATNESS TO BE LESS THAN 0.4mm OVER ANY 100mm LENGTH

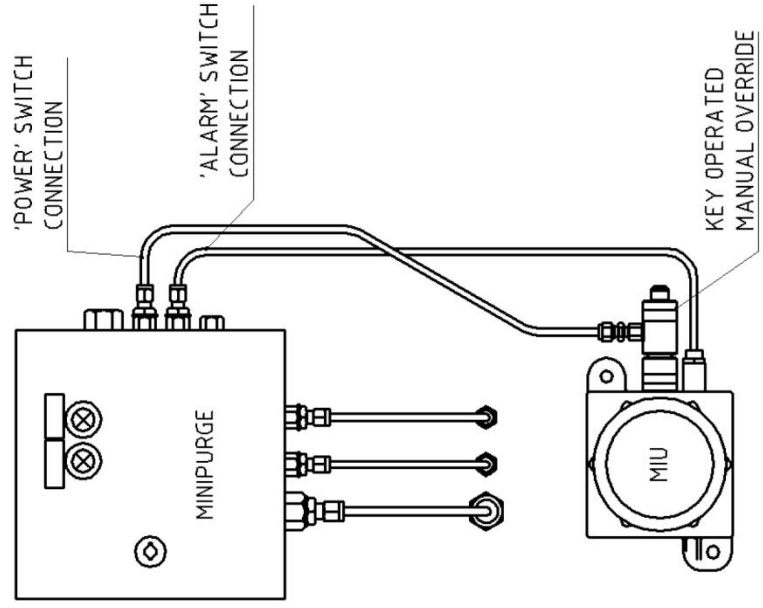
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CONFORMAL WASHER
MGA-Z000-028



MOUNTING INSTRUCTIONS

1. DUST COVER SUPPLIED LOOSE.
2. SUPPORT ACTUATOR ASSEMBLY WHEN TIGHTENING PNEUMATIC FITTINGS - 5Nm (3.7lbf/ft) MAXIMUM
3. SCREW ACTUATOR ASSEMBLY INTO MIU UNTIL CONFORMAL WASHER IS JUST COMPRESSED.
4. CONTINUE UNTIL PNEUMATIC INPUT IS ALIGNED IN THE DESIRED DIRECTION.
5. LOCK ACTUATOR ASSEMBLY FROM INSIDE MIU USING LOCKNUT/WASHER.
6. IF NECESSARY, ADJUST POSITION OF CONTACTOR ON DIN RAIL WITHIN MIU FOR CORRECT OPERATION.



TYPICAL CONNECTION BETWEEN MINIPURGE PO AND MIU

APP'D	PAO	ISSUE:	1	3	4	10	MATERIAL
CHK'D	PAO	MOD. No:	DRAWN	3832	4-311	4-913	
DR'WN	CDM	DATE:	27/06/2003	03.08.2004	20/6/07	3/3/10	FINISH
		APPROVED:	PAO	PAO	MLC	JPdB	
DRAWING STATUS: CERT RELATED							

Expo Technologies Limited		SURREY KT7 0RH UNITED KINGDOM	
TITLE KEY OPERATED PNEUMATIC MAN. OVERRIDE			
JOB No:		CUSTOMER:	

SCALE	1:1
DRAWING No.	AGM-GM00-016
SHEET No.	2 OF 2



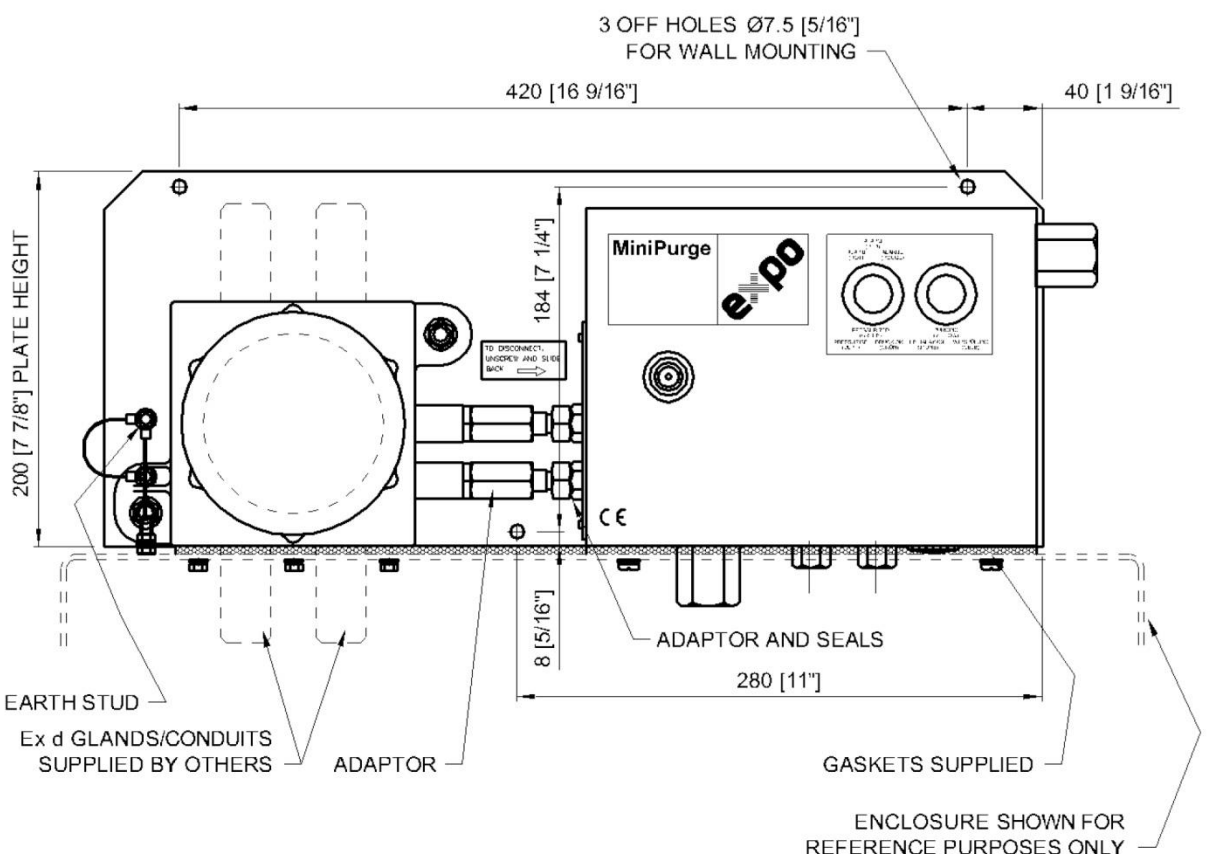
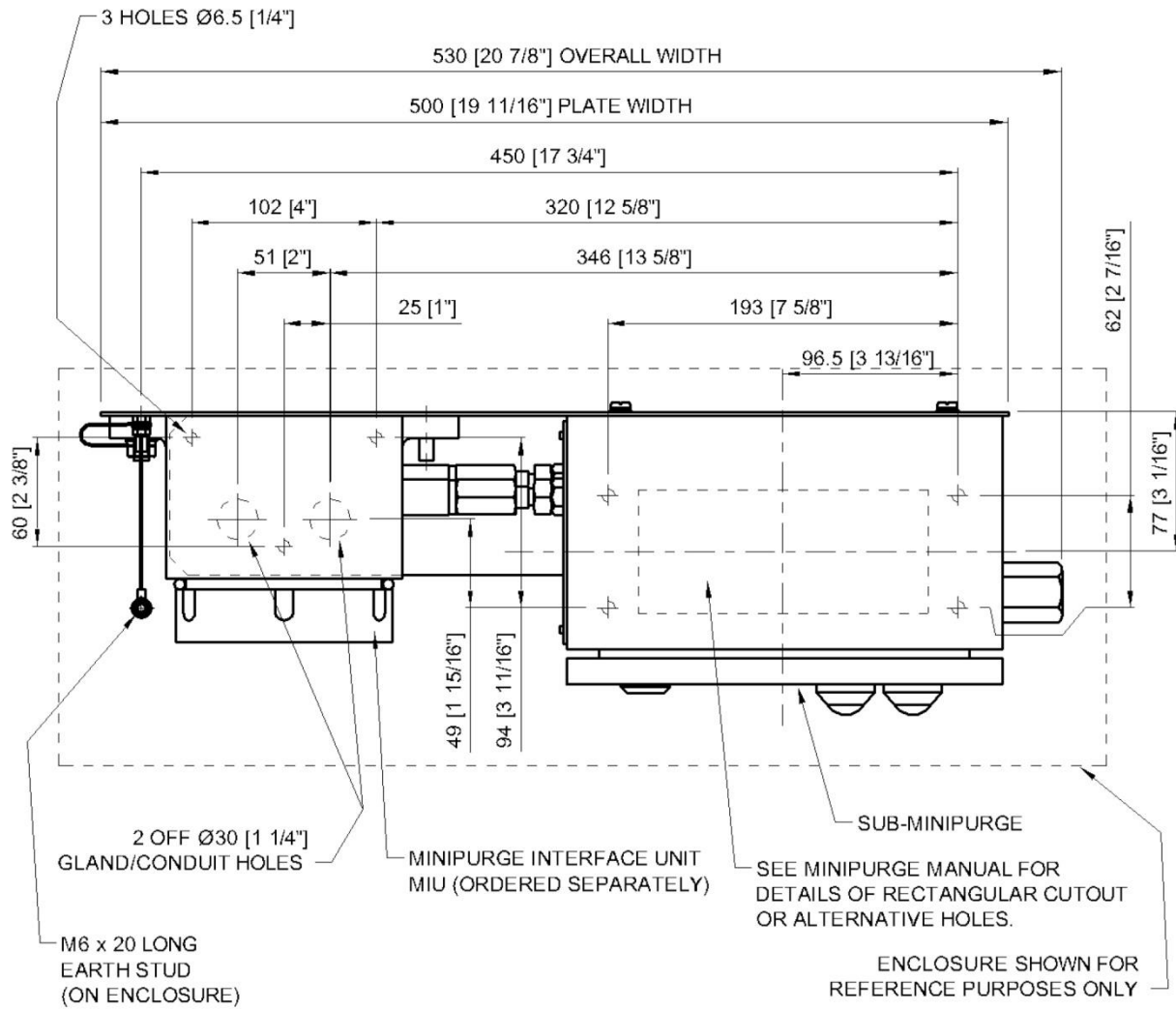
3rd ANGLE PROJECTION

DIMENSIONS IN mm

DO NOT SCALE

UNSPECIFIED NO DEC PLACE ±0.5
TOLERANCES 1 DEC PLACE ±0.2
2 DEC PLACE ±0.1
FLATNESS TO BE LESS THAN 0.4mm OVER ANY 100mm LENGTH

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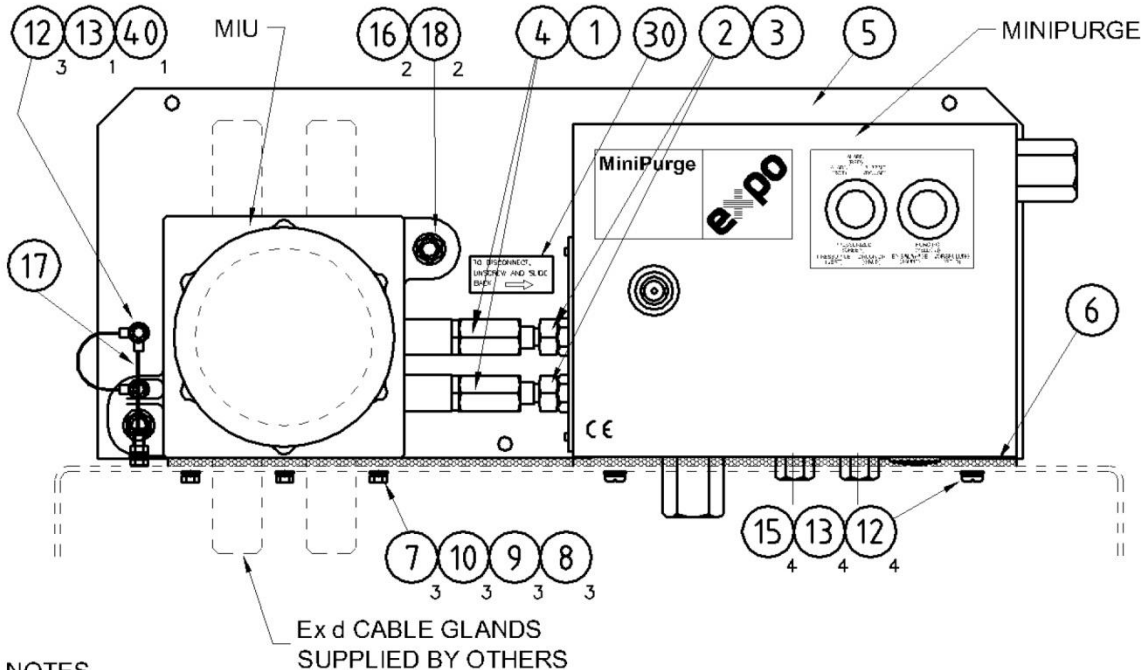
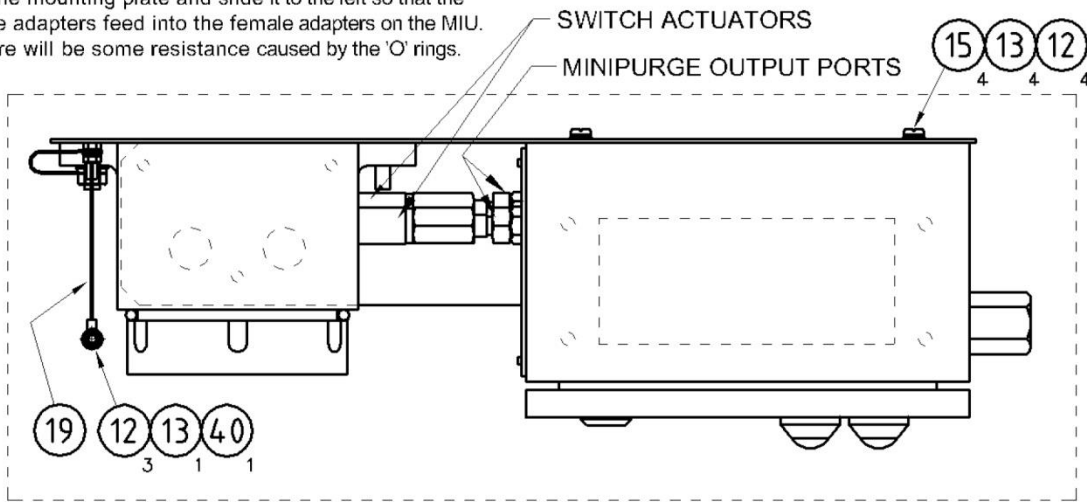
TOTAL WEIGHT = 11Kg (24 POUNDS)

SCALE	NTS	
DRAWING No.	KMP-2600-000	
SHEET No.	1	OF 3
Expo Technologies Limited	SURREY KT7 9RH UNITED KINGDOM	
TITLE	DIRECT CONNECTION KIT SIZE 1 MP TO MIU	
JOB No:	CUSTOMER:	
ISSUE:	1	3
MOD. No:	DRAWN	4309
DATE:	02.08.2004	19/6/07
APPROVED:	PAO	MLC
DRAWING STATUS:	CERT RELATED	
APP'D	PAO	3
CHK'D	PAO	5
DR'WN	CDM	6
MATERIAL	5	6
FINISH	4687	5619
	15/5/09	18/9/12
	JPdB	SB

ASSEMBLY INSTRUCTIONS

1. Prepare holes and cutouts in the enclosure. The Gasket (Item 6) may be used as a template.
2. Lightly lubricate the 'O' ring grooves in the SWITCH ACTUATORS using the grease specified in note 8. Fit 10 mm 'O' rings (item 4). Screw M15 adapters (item 1) over the 'O' rings.
3. Fit grub screws (item 7) so that the MIU can be clamped to the top of the enclosure.
4. Into each MINIPURGE OUTPUT PORT fit male 1/8" adapter (item 2). Lightly lubricate the 'O' ring grooves with the grease specified in note 8 and carefully fit 7.6mm 'O' ring (item 3).
5. Fit the MIU to the M8 studs on the mounting plate (item 5) using items 16 and 18.
6. Remove the existing screws from the back of the MiniPurge. Discard the black rubber washers.
7. Lay the assembly on a flat surface. Position the MiniPurge on the mounting plate and slide it to the left so that the male adapters feed into the female adapters on the MIU. There will be some resistance caused by the 'O' rings.

- When the M6 holes in the back of the MiniPurge line up with the 4 holes in the mounting plate fix the MiniPurge in place with the screws removed in (6) above and items 12, 13 and 15.
8. Connect the MIU EARTH POINT to the M6 stud on the mounting plate using item 19 (earth lead) with Items 12, 13 and 40 (M6 nuts and washers).
9. Remove the protective film from the adhesive layer on the gasket (item 6). Making sure that the holes in the gasket are aligned with the holes in the enclosure press the gasket, adhesive side down, onto the enclosure surface.
10. Place complete assembly in position feeding grub screws and fittings through the enclosure. Fix using items 8, 9 and 10 (M5 nuts and washers) for the MIU and items 12, 13 and 15 (M6 x 20 pan hd screws + washers) for the MiniPurge. Fit cable glands (not supplied).
11. Fit earth lead (item 17) between the M6 Stud on the mounting plate (item 5) and the M6 stud on the enclosure using M6 locknuts and washers (Items 12, 13 and 40).



NOTES

1. MiniPurge and MIU must be ordered separately.
2. MiniPurge must be either 1XLC/ss/PO or 1XCF/ss/PO.
3. MIU must be dA Type AMU-9AA1-510 or AMU-9AA1-511 with additional holes E and F.
4. Cable glands into MIU must be Ex d and suitable for hazardous location and cable.
5. Allow enough space within the enclosure for cable glands and pneumatic pipework.
6. Manual override option is not possible with this kit.
7. Earth cable to be at least 4mm² CSA (AWG 11).
8. Vacuum grease or silicon grease must be used. The recommended grease is Dow Corning MS4.

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UNSPECIFIED NO DEC PLACE ±0.5
 TOLERANCES 1 DEC PLACE ±0.2
 2 DEC PLACE ±0.1
 FLATNESS TO BE LESS THAN 0.4mm OVER ANY 100mm LENGTH

DIMENSIONS IN mm
 DO NOT SCALE



		SCALE	NTS	
		DRAWING No.		KMP-2600-000
SURREY KT7 0RH UNITED KINGDOM		JOB No:		CUSTOMER:
Expo Technologies Limited		TITLE		
DIRECT CONNECTION KIT SIZE 1MP TO MIU		FINISH		
MATERIAL		DRAWING STATUS: NON CERTIFIED		
ISSUE:	MOD. No:	DATE:	APPROVED:	DRAWING STATUS:
PAO	PAO	PAO	MLC	JPdB
APPD	CHK'D	DRW'N	CDM	SB
1	DRAWN	02.08.2004	19/6/07	15/5/09
6	4687	5619	18/9/12	18/9/12

3rd ANGLE
PROJECTION



DIMENSIONS IN mm
DO NOT SCALE

UNSPECIFIED: NO DEC PLACE ±0.5
TOLERANCES: 1 DEC PLACE ±0.2
2 DEC PLACE ±0.1
FLATNESS TO BE LESS THAN 0.4mm OVER ANY 100mm LENGTH

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1	HFX-E715-000	ADAPTOR FEMALE/FEMALE M15(F) TO 12 MM BORE	2
2	HFY-ZZA0-000	ADAPTOR 1/8" TO 12 MM OD TUBE	2
3	MSE-R007-6R0	SEAL O RING ID 7.6, OD 12.4	2
4	MSE-R010-0R1	O RING NITRILE 70, SIZE 10 ID X 1.3 CROSS SECT	2
5	MPA-S000-054	Plate MIU mounting	1
6	MGA-R000-034	GASKET TOP MOUNT MINIPURGE + MIU	1
7	FGM-0503-0ES	SCREW GRUB M5 X 30 SKT CUP PT A2 STAINLESS	3
8	FNM-05F0-00S	NUT M5 FULL A2 STAINLESS	3
9	FWM-05PA-00S	WASHER M5 PLAIN FORM A A2 STAINLESS	3
10	FWM-05S0-00S	WASHER M5 SGL COIL SPRING A2 STAINLESS	3
12	FWM-06S0-00S	WASHER M6 SGL COIL SPRING A2 STAINLESS	1
13	S0019/027	WASHER M6, SEALOC	8
15	FBM-0602-0GS	SCREW M6 X 20 PAN HD SLT A2 STAINLESS	8
16	FNM-08N0-00S	NUT M8 NYLOC A2 STAINLESS	2
17	AGE-CAL0-032	ASSY, EARTH LEAD 60MM LONG M6 RINGS	1
18	FWM-08PA-00S	WASHER M8 FORM A A2 STAINLESS	2
19	AGE-CAL0-033	ASSY, EARTH LEAD 160MM LONG M6 RINGS	1
20	XBR-7TD0-007	DRAWING MIU MOUNTING KIT	1
22	KMP-2600-000P	KIT ASSEMBLY PARTSLIST, PRINT OFF FROM ETSS	1
30	MLA-Z000-001	LABEL MIU MOUNT PLATE (INSTRUCTIONS)	1
40	FNM-06T0-00S	NUT M6.(LOCKNUT) A2 STAINLESS	3

APPD
PAO

ISSUE:
MOD. No: 4167

DATE: 24/05/06
APPROVED: PAO

1 5 6
4687 5619

18/9/12
JPdB SB

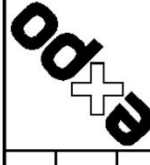
DRAWING STATUS: **NON CERTIFIED**

MATERIAL

FINISH

Expo Technologies Limited

SURREY KT7 0RH
UNITED KINGDOM



SCALE NTS

DRAWING No.

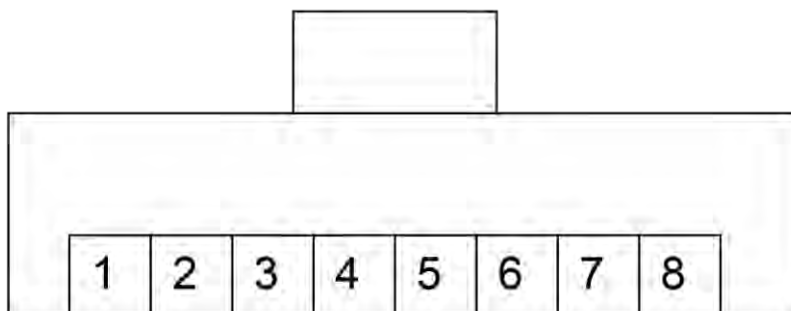
KMP-2600-000

SHEET No. 3 OF 3

TITLE **DIRECT CONNECTION KIT SIZE 1MP TO MIU**

JOB No: CUSTOMER:

Connections for Cat 5 UTP Network Cabling



View of RJ 45 Plug looking onto the pin ends

Pin Number	Pin Function		Wire Colour*
1	TX+	Transmit data +	White/Orange
2	TX-	Transmit data -	Orange
3	RX+	Receive data +	White/Green
4	No connection		Blue
5	No connection		White/Blue
6	RX-	Receive data -	Green
7	No connection		White/Black
8	No connection		Black

* Wire colours are not necessarily common to all cable varieties. Always check the pinout of the connector.

Transmit and receive are noted as data flows out of the network interface card on the PC. Obviously, Transmit and Receive are the reverse on the hub.



EC TYPE-EXAMINATION CERTIFICATE

1. Equipment intended for use in Potentially Explosive Atmospheres Directive 94/9/EC
2. Certificate Number: **Sira 02ATEX1129** Issue: **4**
3. Equipment: **MiniPurge Interface Unit Type MTU/d**
4. Applicant: **Expo Technologies Limited**
5. Address: **Unit 2, The Summit
Hanworth Road
Surrey TW16 5DB
UK**

7. This equipment and any applicable variation thereto is specified in the schedule to this certificate and the documents therein referred to.

8. Sira Certification Service, notified body number 0518 in accordance with Article 9 of Directive 94/9/EC of 23 March 1994, certifies that this equipment has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment intended for use in potentially explosive atmospheres given in Annex II to the Directive.

The examination and test results are recorded in the confidential reports listed in Section 14.2.

9. Compliance with the Essential Health and Safety Requirements, with the exception of those listed in the schedule to this certificate, has been assured by compliance with the following documents:

- EN 60079-0: 2006
- EN 60079-1: 2004
- EN 61241-0: 2006
- EN 61241-1: 2004

10. If the sign 'X' is placed after the certificate number, it indicates that the equipment is subject to special conditions for safe use specified in the schedule to this certificate.

11. This EC type-examination certificate relates only to the design and construction of the specified equipment. If applicable, further requirements of this Directive apply to the manufacture and supply of this equipment.

12. The marking of the equipment shall include the following:

- II 2 GD
 - Ex d IIC T6 (T_{amb}-20°C to +40°C) or Ex d IIC T5 (T_{amb}-20°C to +55°C)
 - Ex d IIB+H₂ T6 (T_{amb}-20°C to +40°C) or Ex d IIB+H₂ T5 (T_{amb}-20°C to +55°C)
 - Ex ID A21 IP6X T80°C (T_{amb}-20°C to +40°C) or Ex ID A21 IP6X T95°C (T_{amb}-20°C to +55°C)
- (The marking that is applicable depends upon type, refer to certificate schedule)

C Elloby
Deputy Certification Manager

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SCHEDULE

EC TYPE-EXAMINATION CERTIFICATE

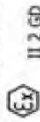
Sira 02ATEX1129
Issue 4

13

DESCRIPTION OF EQUIPMENT

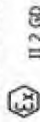
The MiniPurge Interface Units comprise a flameproof enclosure with various internal equipment dependent upon the application. The enclosures used are either Exo dA, dX, dT, dK or dN depending upon the size or type required, see applicable codings below.

dA, dX, and dT Enclosures



- II 2 GD
- Ex d IIC T6 (T_{amb}-20°C to +40°C) or Ex d IIC T5 (T_{amb}-20°C to +55°C)
- Ex ID A21 IP6X T80°C (T_{amb}-20°C to +40°C) or Ex ID A21 IP6X T95°C (T_{amb}-20°C to +55°C)

dK and dN Enclosures



- II 2 GD
- Ex d IIB+H₂ T6 (T_{amb}-20°C to +40°C) or Ex d IIB+H₂ T5 (T_{amb}-20°C to +55°C)
- Ex ID A21 IP6X T80°C (T_{amb}-20°C to +40°C) or Ex ID A21 IP6X T95°C (T_{amb}-20°C to +55°C)

The range of enclosures have the same basic geometry but are of differing sizes. The enclosures are all essentially square in profile with a circular lid. The joint between the lid and the enclosure forms a threaded flamepath; the lid is secured by means of a locking device. There is an option to include bosses for the installation of internal apparatus. Mounting is by means of two or more tapped holes in the rear face or by the use of mounting pads. Two or more protruding mounting lugs are optional.

External earthing facilities comprise M4 (or larger) earth studs on the surface of the box or mounting pads; the studs are equipped with nuts, washers and anti-rotation lugs. Alternatively or additionally, external earthing may be provided at the mounting lug(s). Tapped holes in the earth lugs between anti-rotation ribs are optional.

Internal earthing is provided either by a tapped hole in the internal rear face or by means of conventional rail-mounted earth terminals secured to the internal rear face.

"O" ring seals may be used to enhance the ingress protection rating.

The enclosures may be manufactured from copper-free aluminium, grey iron, S.G. iron, phosphor bronze, gunmetal or stainless steel.

Cable entry facilities are provided on the sides and rear of the enclosure.

To allow the control of the internal equipment, linear feed through devices, Type C9L, may be utilised as required. These are installed in the areas designated for cable entry devices. The feed through device comprises a threaded barrel with a central shaft secured with crimps at each end. The device is secured in the wall (or rear) of the enclosure by means of a locknut and optional thread sealing washer. An optional external "O" ring seal around the shaft, outside the flamepath, can improve the IP rating. The feed through can be fitted with unspecified external operators, e.g. push-buttons.

The scope of this certificate covers a range of internal components which may be installed within the flameproof enclosure, including limitations with respect to their location. Typical internal equipment comprises terminals, switches, contactors, relays and some intrinsically safe equipment. Although this certificate allows the inclusion of this intrinsic safety equipment, it does not endorse their intrinsic safety properties (see certificate conditions).

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SCHEDULE

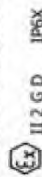
EC TYPE-EXAMINATION CERTIFICATE

Sira 02ATEX1129
Issue 4

Variation 1

This variation introduced the following changes:

- i. The company name was changed from Expo-Teleton Safety Systems Ltd. to Expo Technologies Ltd. together with a change of company logo.
- ii. The Minipurge Interface Unit Type MIU/d was allowed to be used in the presence of combustible dust; the marking of the equipment to include the following:



Variation 2

This variation introduced the following changes:

- i. The Minipurge Interface Unit Type MIU/d was allowed to be used in a maximum upper ambient temperature of +55°C with a temperature classification of T5.

Variation 3

This variation introduced the following changes:

- i. The Minipurge Interface Unit Type MIU/d was assessed and found to comply with the requirements of EN 60079-0:2006, EN 60079-1:2004, EN 61241-0: 2006 and EN 61241-1: 2004.
- ii. The type dK and dN enclosures were introduced.

Variation 4 - This variation introduced the following changes:

- i. The recognition of the Applicant's address change from Summer Road, Thames Ditton, Surrey KT7 0RH to Unit 2, The Summit, Hamworth Road, Sunbury on Thames, Surrey TW16 5DB.

1.4 DESCRIPTIVE DOCUMENTS

1.4.1 Drawings

Refer to Certificate Annexes.

1.4.2 Associated Sira Reports and Certificate History

Issue	Date	Report no.	Comment
0	7 June 2002	RS1A7166A	The release of prime certificate.
1	15 August 2005	RS1A11088A	The introduction of Variation 1.
2	2 September 2005	RS1A13616A	The introduction of Variation 2.
3	27 April 2007	RS1115967A	This Issue covers the following changes: <ul style="list-style-type: none"> • All previously issued certification was rationalised into a single certificate, Issue 3. Issues 0 to 2 referenced above are only intended to reflect the history of the previous certification and have not been issued as documents in this format. • The company name was changed to Expo Technologies Ltd. • The introduction of Variation 3.
4	05 October 2012	R29097A/00	The introduction of Variation 4.

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SCHEDULE

EC TYPE-EXAMINATION CERTIFICATE

Sira 02ATEX1129
Issue 4

15

SPECIAL CONDITIONS FOR SAFE USE (denoted by X after the certificate number)
None

16

ESSENTIAL HEALTH AND SAFETY REQUIREMENTS OF ANNEX II (EHSRs)

The relevant EHSRs that are not addressed by the standards listed in this certificate have been identified and individually assessed in the reports listed in Section 14.2.

17

CONDITIONS OF CERTIFICATION

- 17.1 The use of this certificate is subject to the Regulations Applicable to Holders of Sira Certificates.
- 17.2 Holders of EC type-examination certificates are required to comply with the production control requirements defined in Article 8 of directive 94/9/EC.
- 17.3 Only the internal components listed in the manufacturer's drawing EP90-6 may be installed in the Minipurge Interface Units, in accordance with the geometrical restrictions laid down in manufacturer's drawings EP90-8A, EP90-8X, EP90-8T and SD7529.
- 17.4 The scope of this certificate, though allowing 'intrinsic safe equipment' to be installed in accordance with condition 17.3, does not imply compliance with EN 60079-11: 2007 for either the installation or output parameters of such equipment.

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Certificate Annexe

Certificate Number: Sira 02ATEX1129

Equipment: Minipurge Interface Unit Type MIU/d

Applicant: Expo Technologies Limited



Issue 0

The drawings associated with this Issue were replaced by those listed in Issue 3.

Issue 1

The drawings associated with this Issue were replaced by those listed in Issue 3.

Issue 2

The drawings associated with this Issue were replaced by those listed in Issue 3.

Issue 3

Drawing No.	Sheet	Rev.	Date	Description
EP90-3dA	1 of 1	6	21 Nov 06	Ex d Boxes Dimensions Key
EP90-2dA	1 of 1	3	21 Nov 06	dA Box
EP90-8A	1 of 1	4	05 Feb 07	dA Box Contents
EP90-2dX	1 of 1	2	21 Nov 06	dX Box
EP90-8X	1 of 1	4	05 Feb 07	dX Box Contents
EP90-2dT	1 of 1	2	21 Nov 06	dT Box
EP90-8T	1 of 1	4	05 Feb 07	dT Box Contents
SD7528	1 of 1	1	22 Feb 07	Key to Dimensions dK and dN Boxes
SD7529	1 of 1	1	22 Feb 07	dK and dN Boxes Contents
EP90-5	1 of 1	4	05 Feb 07	Earthing and Other Details
SD7485	1 of 1	2	15 Mar 07	Ex d Box Sealing for Dust Certification
EP90-10	1 of 1	3	27 Feb 07	Linear Feedthrough C9L
EP90-4dA	1 to 9	5	20 Feb 07	d Series Boxes Data Sheets
EP90-6	1 of 1	6	20 Feb 07	Permitted Contents for MIU/d
SD7526	1 of 1	1	20 Feb 07	MIU/d Certification Label ATEX/IECEX

Issue 4

Drawing No.	Sheet	Rev.	Date (Sira stamp)	Title
SD7526	1 of 1	2	05 Oct 12	MIU/d Certification Label

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Sira Certification Service

Rake Lane, Eccleston, Chester, CH4 9JN, England

Tel: +44 (0) 1244 670900

Fax: +44 (0) 1244 681330

Email: info@siracertification.com

Web: www.siracertification.com



IECEX Certificate of Conformity

INTERNATIONAL ELECTROTECHNICAL COMMISSION IEC Certification Scheme for Explosive Atmospheres

for rules and details of the IECEx Scheme visit www.iecex.com

Certificate No.: IECEx SIR 07.0008 Issue No.: 2 Page 1 of 4

Status: Current

Date of issue: 2012-11-27

Certificate history:
Issue No. 2 (2012-11-27)
Issue No. 1 (2012-10-23)
Issue No. 0 (2007-5-4)

Applicant: **EXPO Technologies Limited**
Unit 2, The Summit
Hanworth Road
Sunbury on Thames
Surrey TW16 5DB
United Kingdom

Electrical Apparatus: **Minipurge Interface Unit Type MIUId**
Optional accessory:

Type of Protection: **Flameproof and Dust**

Marking:
Ex d IIC T6 (Tamb -20°C to +40°C)
Ex d IIC T5 (Tamb -20°C to +55°C)
Ex d IIB+H2 T6 (Tamb -20°C to +40°C)
Ex d IIB+H2 T5 (Tamb -20°C to +55°C)
Ex ID A21 IP6X T80°C (Tamb -20°C to +40°C)
Ex ID A21 IP6X T95°C (Tamb -20°C to +55°C)
(The marking that is applicable depends upon type)

Approved for issue on behalf of the IECEx
Certification Body: C Eliaby
Deputy Certification Manager

Signature: *(Signature)*
Date: 2012-11-27

1. This certificate and schedule may only be reproduced in full.
2. This certificate is not transferable and remains the property of the issuing body.
3. The Status and authenticity of this certificate may be verified by visiting the [Official IECEx Website](http://www.iecex.com).

Certificate issued by: **SIRA Certification Service**
Rate Lane
Eccleston
Chester
CH4 9JN
United Kingdom

sira
CERTIFICATION



IECEX Certificate of Conformity

Certificate No.: IECEx SIR 07.0008 Issue No.: 2 Page 2 of 4

Date of issue: 2012-11-27

Manufacturer: **EXPO Technologies Limited**
Unit 2, The Summit
Hanworth Road
Sunbury on Thames
Surrey TW16 5DB
United Kingdom

Manufacturing location(s):

This certificate is issued as verification that a sample(s), representative of production, was assessed and tested and found to comply with the IEC Standard list below and that the manufacturer's quality system, relating to the Ex products covered by this certificate, was assessed and found to comply with the IECEx Quality system requirements. This certificate is granted subject to the conditions as set out in IECEx Scheme Rules, IECEx 02 and Operational Documents as amended.

STANDARDS:
The electrical apparatus and any acceptable variations to it specified in the schedule of this certificate and the identified documents, was found to comply with the following standards:

- IEC 60079-0 : 2004** Electrical apparatus for explosive gas atmospheres - Part 0: General requirements Edition: 4.0
- IEC 60079-1 : 2003** Electrical apparatus for explosive gas atmospheres - Part 1: Flameproof enclosure 'd' Edition: 5
- IEC 61241-0 : 2004** Electrical apparatus for use in the presence of combustible dust - Part 0: General requirements Edition: 1
- IEC 61241-1 : 2004** Electrical apparatus for use in the presence of combustible dust - Part 1: Protection by enclosures 'D' Edition: 1

This Certificate does not indicate compliance with electrical safety and performance requirements other than those expressly included in the Standards listed above.

TEST & ASSESSMENT REPORTS:
A sample(s) of the equipment listed has successfully met the examination and test requirements as recorded in

Test Report: GB/SIR/EXTR07.0032/00 GB/SIR/EXTR12.0251/01

Quality Assessment Report: GB/SIR/IOAR07.0012/00 GB/SIR/IOAR07.0012/01 GB/SIR/IOAR07.0012/03 GB/SIR/IOAR07.0012/04 GB/SIR/IOAR07.0012/05



IECEx Certificate of Conformity

Certificate No.:

IECEX SIR 07.0008

Date of issue:

2012-11-27

Issue No.: 2

Page 3 of 4

Schedule

EQUIPMENT:

Equipment and systems covered by this certificate are as follows:

The Manipurge Interface Units comprise a flameproof enclosure with various internal equipment dependent upon the application. The enclosures used are either Expo dA, dX, dT, dK or dN depending upon the size or type required, see detailed description in the certificate Annex. The applicable codings are listed below:

dA, dX, and dT Enclosures

Ex d IIC T6 (Tamb -20°C to + 40°C) or
Ex d IIC T5 (Tamb -20°C to +55°C)
Ex d A21 IP6X T80°C (Tamb -20°C to + 40°C) or
Ex d A21 IP6X T95°C (Tamb -20°C to +55°C)

dK and dN Enclosures

Ex d IIB+H2 T6 (Tamb -20°C to + 40°C) or
Ex d IIB+H2 T5 (Tamb -20°C to +55°C)
Ex d A21 IP6X T80°C (Tamb -20°C to + 40°C) or
Ex d A21 IP6X T95°C (Tamb -20°C to +55°C)

CONDITIONS OF CERTIFICATION: NO



IECEx Certificate of Conformity

Certificate No.:

IECEX SIR 07.0008

Date of issue:

2012-11-27

Issue No.: 2

Page 4 of 4

DETAILS OF CERTIFICATE CHANGES (for issues 1 and above):

Issue 1 – this issue introduced the following changes:

1 The recognition of the Applicant's address change from Summer Road, Thames Ditton, Surrey KT7 0RH to Unit 2, The Summit, Hamworth Road, Sunbury on Thames, Surrey TW16 5DB.

Issue 2 – this issue introduced the following changes:

1 Issued to allow GB/SIR/EXTR12.0251/00 to be replaced by GB/SIR/EXTR12.0251/01

Annexe to: IECEx SIR 07.0008 Issue 2 Annexe

Applicant: Expo Technologies Limited

Apparatus: Minipurge Interface Unit Type MIU/d



Description of Apparatus

The range of enclosures have the same basic geometry but are of differing sizes. The enclosures are all essentially square in profile with a circular lid. The joint between the lid and the enclosure forms a threaded flamepath; the lid is secured by means of a locking device. There is an option to include bosses for the installation of internal apparatus. Mounting is by means of two or more tapped holes in the rear face or by the use of mounting pads. Two or more protruding mounting lugs are optional.

External earthing facilities comprise M4 (or larger) earth studs on the surface of the box or mounting pads; the studs are equipped with nuts, washers and anti-rotation lugs. Alternatively or additionally, external earthing may be provided at the mounting lug(s). Tapped holes in the earth lugs between anti-rotation ribs are optional.

Internal earthing is provided either by a tapped hole in the internal rear face or by means of conventional rail-mounted earth terminals secured to the internal rear face.

"O" ring seals may be used to enhance the ingress protection rating.

The enclosures may be manufactured from copper-free aluminium, grey iron, S.G. iron, phosphor bronze, gunmetal or stainless steel.

Cable entry facilities are provided on the sides and rear of the enclosure.

To allow the control of the internal equipment, linear feed through devices, Type C9L, may be utilised as required. These are installed in the areas designated for cable entry devices. The feed through device comprises a threaded barrel with a central shaft secured with circlips at each end. The device is secured in the wall (or rear) of the enclosure by means of a locknut and optional thread sealing washer. An optional external "O" ring seal around the shaft, outside the flamepath, can improve the IP rating. The feed through can be fitted with unspecified external operators, e.g. push-buttons.

The scope of this certificate covers a range of internal components which may be installed within the flameproof enclosure, including limitations with respect to their location. Typical internal equipment comprises terminals, switches, contactors, relays and some intrinsically safe equipment. Although this certificate allows the inclusion of this intrinsic safety equipment, it does not endorse their intrinsic safety properties (see conditions of manufacture below).

The manufacturer shall note the following conditions of manufacture:

- i. Only the internal components listed in the manufacturer's drawing EP90-6 may be installed in the Minipurge Interface Units, in accordance with the geometrical restrictions laid down in manufacturer's drawings EP90-8A, EP90-8X, EP90-8T and SD7529.
- ii. The scope of this certificate, though allowing 'intrinsically safe equipment' to be installed in accordance with condition i, does not imply compliance with IEC 60079-11:2006 for either the installation or output parameters of such equipment.



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Certificado de Conformidade

Certificate of Compliance • Certificado de Conformidade

Certificado nº: **TÜV 12.1464**
Certificate / Certificado nº
Emitido em **13/07/2015**
Issued / Emitido

Revisão: **01**
Review/Revisión

Válido até: **13/07/2018**
Valid Until / Válido Hasta

Produto:
Product/Producto:

UNIDADE DE INTERFACE
MIU/d

Marca:
Mark/Marca:

EXPO

Solicitante:
Applicant/Solicitante:

EXPO TECHNOLOGIES Limited
Unit 2, The Summit
Hanworth Road – Sunbury on Thames
United Kingdom

Fabricante:
Manufacturer/Fabricante:

EXPO TECHNOLOGIES Limited
Unit 2, The Summit
Hanworth Road – Sunbury on Thames
United Kingdom

Fornecedor / Representante Legal:
Supplier/Legal Representative/Provedor/
Representante Legal:

Não aplicável

Normas Técnicas / Regulamento:
Standards/Regulation/Normas/Reglamento:

ABNT NBR IEC 60079-0:2008;
ABNT NBR IEC 60079-1:2009;
Portaria INMETRO nº 179 de 18/05/2010.

Esquema de certificação:
Certification Scheme/Esquema de certificación

Modelo com Avaliação do Sistema de Gestão da Qualidade do Fabricante e Ensaio no Produto, conforme cláusula 6.1 do Regulamento de Avaliação da Conformidade, anexo à Portaria nº 179 do INMETRO, publicada em 18 de Maio de 2010.

Laboratório, Nº do relatório de ensaios e data:
Laboratory and test report nº / date /

Sira Test & Certification.
Relatório de ensaios: GB/SIR/EXTR07.0032/00 de Março/2007.
Relatório de ensaios: GB/SIR/EXTR07.0008 – emissão 02 de 27/11/2012.

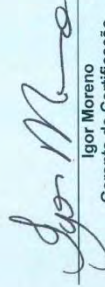
Relatório de Auditoria e data:
Audit Report/ data/ Informe de Auditoria/ fecha:

Auditoria realizada em 10/07/2015

Notas:
Notes/Anotación:

"Este documento é composto de 04 páginas e é válido quando exibido com todas as suas páginas. Demais informações e notas estão contidas nas páginas subsequentes."
Este certificado está vinculado à proposta 0189412.0 de 10/08/2012

"A validade deste Certificado de Conformidade está atrelada à realização das avaliações de manutenção e tratamento de possíveis não conformidades de acordo com as orientações do OCP previstas no RAC específico. Para verificação da condição atualizada de regularidade deste Certificado de Conformidade deve ser consultado o banco de dados de produtos e serviços certificados do Inmetro".


Igor Moreno
Gerente de Certificação

Certification Manager / Gerente de Certificação



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Certificado de Conformidade

Certificate of Compliance • Certificado de Conformidade

Certificado nº: **TÜV 12.1464**
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Emitido em **13/07/2015**
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Válido até: **13/07/2018**
Valid Until / Válido Hasta

Especificações:

A unidade de interface MiniPurge modelo MIU/d é formada por um invólucro "à prova de explosão" e por diversos componentes/equipamentos que podem ser instalados internamente. Os invólucros utilizados são dos modelos dA, dX, dT, dK ou dN, e possuem o mesmo formato básico, diferindo apenas no tamanho e nos componentes instalados. Os invólucros são de perfil quadrado e possuem uma tampa circular, que forma uma junta rosca entre a tampa e o invólucro, travada com a utilização de um parafuso. A instalação dos componentes é realizada com o auxílio de dois ou mais furos não-passantes na parede inferior do invólucro ou com a utilização de blocos de montagem. Opcionalmente, o invólucro pode ser fornecido com dois ou mais olhais de fixação.

O invólucro possui terminais de aterramento (M6 ou maior) na superfície externa do invólucro ou nos blocos de montagem. Esses terminais possuem porcas, arruelas e pinos anti-rotação. Alternativamente ou adicionalmente, podem ser fornecidos terminais de aterramento externos nos olhais de fixação. Opcionalmente, o invólucro pode ser fornecido com furos não-passantes entre os ressaltos anti-rotação dos terminais de aterramento. O aterramento interno é realizado através de um furo não-passante na face inferior interna do invólucro ou com a utilização de conectores de aterramento montados em trilho nessa mesma face.

O invólucro pode ser fabricado em alumínio isento de cobre, ferro fundido (cinzento ou nodular), bronze fosforoso, latão vermelho (*gunmetal*) ou aço inoxidável e pode ser fornecido com um anel de vedação 'o' ring para proporcionar um grau de proteção adequado.

O invólucro é fornecido com entradas rosçadas nas paredes laterais e/ou na face traseira. A quantidade de entradas e a distância entre elas estão limitadas aos valores apresentados no documento nº EP90-4dA. As rosças permitidas são: 3/8" x 16 UNC, M20 x 1,5, M25 x 1,5, M32 x 1,5, M40 x 1,5 e M50 x 1,5.

Para possibilitar o controle dos equipamentos internos, o invólucro pode ser fornecido com dispositivos de passagem (feed-through) do modelo C9L. Este dispositivo é formado por uma bucha rosca e por um eixo interno, preso com anéis de fixação em ambas as extremidades. O dispositivo é fixado à parede do invólucro com uma contraporca e com uma arruela de vedação opcional. Este dispositivo de passagem pode ser fornecido com um anel de vedação 'o' ring - instalado em volta do eixo e fora da passagem de chama - para proporcionar um grau de proteção adequado.

As unidades de interface podem ser fornecidas com diversos componentes internos, entre eles, terminais, chaves, contadores, relés, etc. Os componentes internos devem ser selecionados e instalados de acordo com os desenhos nº's EP90-6, EP90-8A, EP90-8X, EP90-8T e SD7529.

Regra de formação do modelo:

MIU / *(a) / *(b) / *(c) / *(d) / *(e) / ** (f)

*(a) → Código referente ao sistema de purga associado

*(b) → Tipo de invólucro: dA, dX, dT, dK ou dN

*(c) / *(d) / *(e) → Números de contatos elétricos

** (f) → Sem influência no tipo de proteção

Análise e ensaios realizados:

As análises e os ensaios realizados encontram-se no relatório técnico nº AEX-13100.



Certificado nº: **TÜV 12.1464**

Revisão: **01**

Válido até: **13/07/2018**

Certificate / Certificado nº

Review / Revisión

Valid Until / Válido Hasta

Emitido em **13/07/2015**

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Documentação descritiva do produto:

- Relatório de ensaios nº GB/SIR/ExTR07.0032/00 de Março/2007;
- Relatório de ensaios nº GB/SIR/ExTR07/0008 - Emissão 02 de 27/11/2012;
- Relatório de ensaios nº GB/SIR/ExTR12.0251/01

Documento	Descrição	Rev.	Data
EP90-3dA	Ex d Boxes Dimensions Key	6	21/11/2006
EP90-2dA	dA Box	3	21/11/2006
EP90-8A	dA Box Contents	4	05/02/2007
EP90-2dX	dX Box	2	21/11/2006
EP90-8X	dX Box Contents	4	05/02/2007
EP90-2dI	dI Box	2	21/11/2006
EP90-8I	dI Box Contents	4	05/02/2007
SD7528	Key to Dimensions of dK & dN Boxes	1	22/02/2007
SD7529	dK & dN Boxes Contents	1	22/02/2007
EP90-5	Earthing and Other Details	4	05/02/2007
SD7485	Ex d Box Sealing for Dust Certification	2	15/03/2007
EP90-10	Linear Feedthrough C9L	3	27/02/2007
EP90-4dA	d-Series Boxes Data Sheets (9 folhas)	5	20/02/2007
EP90-6	Permitted Contents for MIU/d	6	20/02/2007
SD7526	MIU/d Certification Label ATEX/IECEX	3	02/07/2015
SD7650	MIU/d TUV Certification Label	4	13/07/2015
SD7651	MIU/d Portuguese Manual Extracts	4	13/07/2015

Marcação:

As unidades de interface MiniPurge modelo MIU/d foram aprovadas nos ensaios e análise, nos termos das normas adotadas, devendo receber a marcação, levando-se em consideração o item observações.

Modelos dA, dX e dI:

Ex d IIC T5/T6 Gb
Ex tb IIIC T80 °C/T95 °C Db
IP66
-20 °C ≤ Ta ≤ +40 °C (T6 /T80 °C)
-20 °C ≤ Ta ≤ +55 °C (T5 /T95 °C)

Modelos dK e dN:

Ex d IIB+H2 T5/T6 Gb
Ex tb IIIB+H2 T80 °C /T95°C Db
IP66
-20 °C ≤ Ta ≤ +40 °C (T6 /T80 °C)
-20 °C ≤ Ta ≤ +55 °C (T5 /T95 °C)



Certificado nº: **TÜV 12.1464**

Revisão: **01**

Válido até: **13/07/2018**

Certificate / Certificado nº

Review / Revisión

Valid Until / Válido Hasta

Emitido em **13/07/2015**

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Observações:

1. Este Certificado de Conformidade é válido para os produtos de modelo e tipo idêntico ao protótipo ensaiado. Qualquer modificação de projeto ou utilização de componentes e materiais diferentes daqueles descritos na documentação deste processo, sem autorização prévia da TÜV Rheinland, invalidará o certificado.
2. É de responsabilidade do fabricante assegurar que os produtos fabricados estejam de acordo com as especificações do protótipo ensaiado, através de inspeções visuais e dimensionais.
3. Os produtos devem ostentar, na sua superfície externa e em local visível, a Marca de Conformidade e as características técnicas da mesma de acordo com as especificações da ABNT NBR IEC 60079-0 / ABNT NBR IEC 60079-1 e Regulamento de Avaliação da Conformidade, anexo à Portaria nº 179 do INMETRO, publicada em 18 de maio de 2010. Esta marcação deve ser legível e durável, levando-se em conta possível corrosão química.
4. Os produtos devem ostentar, em lugar visível e de forma indelével, as seguintes advertências:

"ATENÇÃO – NÃO ABRA QUANDO ENERGIZADO"

"ATENÇÃO – A TEMPERATURA DOS CABOS PODE ULTRAPASSAR 70 °C – UTILIZE CABOS ADEQUADOS"

5. Os bujões para fechar as aberturas não utilizadas e os dispositivos de entrada de cabos (prensa-cabos, unidade seladora, etc.) devem ser certificados como à prova de explosão, adequados para as condições de uso e corretamente instalados.
6. As atividades de instalação, inspeção, manutenção, reparo, revisão e recuperação dos produtos são de responsabilidade do usuário e devem ser executadas de acordo com os requisitos das normas técnicas vigentes e com as recomendações do fabricante.

Natureza das revisões/Data

Nature of Reviews/Date

Naturaleza de las revisiones/Fecha

Revisão 00: **13/07/2010 – Certificação Inicial**

25/04/2012 – Adequação do certificado AEX-13100 à Portaria nº179.

14/07/2015 – Revalidação.

Revisão 01:

UL ONLINE CERTIFICATIONS DIRECTORY

RFPW7 E190061
Purging and Pressurizing Controls and Accessories for Use in Hazardous Locations
Certified for Canada

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**Purging and Pressurizing Controls and Accessories for Use in Hazardous Locations
Certified for Canada**

See General Information for Purging and Pressurizing Controls and Accessories for Use in Hazardous Locations Certified for Canada.

EXPO TECHNOLOGIES LIMITED E190061
UNIT 2 THE SUMMIT
HANWORTH ROAD
SUNBURY ON THAMES, SURREY TW16 5DB UNITED KINGDOM

Purge control units, Type X for use in hazardous (classified) locations, Models** 1, 2, 3, 4, 5, 6 or 7 followed by X, followed by CF, CFHP or LC, followed by BP, CS, PM, SS, may be followed by AO, DS, DT, IS, MO, PO, SS.
Type Y for use in hazardous (classified) locations, Models** 1, 2, 3, 4, 5, 6 or 7 followed by Y, followed by CF, CFHP or LC, followed by BP, CS, PM, SS, may be followed by AO, DS, DT, IS, MO, NO, PO, SS.
Type Z for use in hazardous (classified) locations, Models** 1, 2, 3, 4, 5, 6 followed by Z, followed by CF, CFHP or LC, followed by BP, CS, PM, SS, may be followed by AO, DS, DT, IS, MO, NO, PO, SS.
Purge control accessories, Vent unit for use in hazardous (classified) locations, Model RLV followed by 25, 3, 6, 52, 75, 104, 125, 150, or 200, followed by CS or SS, may be followed by FS.

** - I internal series identifier, precedes model number, which may contain one or more characters.

Last Updated: on 2012-10-14

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RFPW E190061
Purging and Pressurizing Controls and Accessories for Use in Hazardous Locations

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Purging and Pressurizing Controls and Accessories for Use in Hazardous Locations

See General Information for Purging and Pressurizing Controls and Accessories for Use in Hazardous Locations.

EXPO TECHNOLOGIES LIMITED E190061
UNIT 2 THE SUMMIT
HANWORTH ROAD
SUNBURY ON THAMES, SURREY TW16 5DB UNITED KINGDOM

Purge control units, Type X for use in hazardous (classified) locations, Models** 1, 2, 3, 4, 5, 6 or 7 followed by X, followed by CF, CFHP or LC, followed by BP, CS, PM, SS, may be followed by AO, DS, DT, IS, MO, PO, SS.
Type Y for use in hazardous (classified) locations, Models** 1, 2, 3, 4, 5, 6 or 7 followed by Y, followed by CF, CFHP or LC, followed by BP, CS, PM, SS, may be followed by AO, DS, DT, IS, MO, NO, PO, SS.
Type Z for use in hazardous (classified) locations, Models** 1, 2, 3, 4, 5, 6 followed by Z, followed by CF, CFHP or LC, followed by BP, CS, PM, SS, may be followed by AO, DS, DT, IS, MO, NO, PO, SS.
Purge control accessories, Vent unit for use in hazardous (classified) locations, Model RLV followed by 25, 3, 6, 52, 75, 104, 125, 150, or 200, followed by CS or SS, may be followed by FS.

** - I internal series identifier, precedes model number, which may contain one or more characters.

Last Updated: on 2012-10-14

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NOIV.E203605

Auxiliary Devices for Use in Hazardous Locations

[See General Information for Auxiliary Devices for Use in Hazardous Locations](#)

AKRON ELECTRIC INC
1025 EAGON ST
BARBERTON, OH 44203 USA

E203605

Class I, Groups B, C and D; Class II, Groups E, F and G.

Open type push button switches, Model XMPB followed by L or S, followed by 1, 2, 3 or 4, may be followed by -N4 or -N4X.

Model XPL followed by LB or SB, followed by numbers, may be followed by N4.

Open type pilot lights, Cat. No. XMPL followed by ES, S or L followed by the letters A, B, G, R or W *and followed by the numbers 12, 24 or 120.

Class I, Groups B, C and D; Class II, Groups E, F and G; Class III.

Open type operator assemblies, Cat. No. XP followed by B, DB, IB, JMH, K2L, K2R, K2S, K3C, K3L, K3R, K3S, MH, PM, PP, PTT, 2L, 2R, 2S, 3C, 3L, 3R, or 3S, may be followed by L or S, may be followed by additional suffixes, may be followed by -N4.

Last Updated on 2004-06-07

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ONLINE CERTIFICATIONS DIRECTORY

FTRX.E181300

Enclosure Accessories for Use in Hazardous Locations

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Enclosure Accessories for Use in Hazardous Locations

See General Information for Enclosure Accessories for Use in Hazardous Locations

AKRON ELECTRIC INC E181300
1025 EAGON ST
BARBERTON, OH 44203 USA

Class I, Groups B, C and D; Class II Groups E, F and G; Class III.

Close-up plug, Cat. No. ZNPPP.

Pushbutton and selector assemblies, Cat. No. XP followed by B, BM, DB, JM, K2L, K2R, K2S, K3C, K3L, K3R, K3S, PP, T, 2L, 2R, 2S, 3C, 3L, 3R or 3S, may be followed by L or S, may be followed by additional suffixes, may be followed by -N4, -N4X.

Pushbutton assemblies, Cat. Nos. XRBL, XRBS.

Reset operator, XMR followed by S or L, followed by 1, 2, 3 or 4, may be followed by -N4 or -N4X.

Selector assembly, Cat. No. XNS; followed by L or S, followed by 1, 2, or 4, may be followed by 2 through 12.

The Classification Mark of Underwriters Laboratories Inc. is the only method provided by Underwriters Laboratories Inc. to identify products produced under its Classification and Follow-Up Series. See General Information Card of above guide designation.

Last Updated on 2006-06-06

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NOIV.E203605

Auxiliary Devices for Use in Hazardous Locations

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Auxiliary Devices for Use in Hazardous Locations

See General Information for Auxiliary Devices for Use in Hazardous Locations

AKRON ELECTRIC INC E203605
1025 EAGON ST
BARBERTON, OH 44203 USA

Class I, Groups B, C and D; Class II, Groups E, F and G.

Open type push button switches, Model XNPP followed by L or S, followed by 1, 2, 3 or 4, may be followed by -N4 or -N4X.

Model XPL followed by LB or SB, followed by numbers, may be followed by M4.

Open type pilot lights, Cat. No. XNPL followed by ES, S or L followed by the letters A, B, G, R or W * and followed by the numbers 12, 24 or 120.

Class I, Groups B, C and D; Class II, Groups E, F and G; Class III.

Open type operator assemblies, Cat. No. XP followed by B, DB, IB, JMH, K2L, K2R, K2S, K3C, K3L, K3R, K3S, NH, PM, PP, PTT, 2L, 2R, 2S, 3C, 3L, 3R, or 3S, may be followed by L or S, may be followed by additional suffixes, may be followed by -N4.

Open type selector switches, Cat. No. XMS followed by L or S, followed by 1, 2, or 4, may be followed by 2 through 12.

Last Updated on 2006-10-02

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8th September 2004



Re: MiniPurge Isolator Units, Compliance with NEC500

The range of Expo "MiniPurge Isolator Units" are designed and built using the Adalet range of boxes, UL Listing No. E81696. Additional entries comply with this listing and the completed design is compliant with the National Electrical Code, Article 500 (NEC 500).

Traceability:

The Expo Technologies Label includes for specific Serial Numbering to identify each manufactured explosion-proof MIU.

Signed by

A handwritten signature in black ink, reading "P.D. MacAulay". The signature is written in a cursive style and is contained within a rectangular box.

Peter MacAulay

Managing Director



Expo Technologies Ltd
Unit 2, The Summit, Hanworth Road
Sunbury on Thames TW16 5DB UK

本文件可證明 Expo Technologies Ltd 所生產的「MiniPurge 介面單元 MIU/d」如其描述的，符合歐洲指令與標準：

電磁兼容性指令 - 2004/108/EG

低電壓指令 - 2006/95/EC

MiniPurge 介面單元 MIU/d 的用途是在危險場所 (爆炸性氣體) 中使用，因此不適用低電壓指令。
電性安全符合 EN 61010-1:2010

壓力設備指令 97/23/EC

根據本指令第 9 條規定，MiniPurge 介面單元 MIU/d 的分類不高於第一類；此外，MiniPurge 介面單元 MIU/d 的用途是在有潛在爆炸性氣體 (危險場所) 的環境下使用，因此不適用高壓設備指令。


ATEX 指令 - 94/9/EC

MiniPurge 介面單元 MIU/d 的設計符合 ATEX 指令，並且遵守：

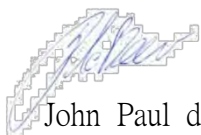
EN 60079-0 : 2012 + A11:2013 EN 60079-1 : 2014 EN 60079-31 : 2014

根據 EC Type-Examination Certificate SIRA 02ATEX1129X 的規定，MiniPurge 介面單元 MIU/d 通過了 SIRA Certification Service、Rake Lane、Ecclestone、Chester CH4 9JN 和英國的認證，並遵守：

EN 60079-0:2006 EN 60079-1:2004 EN 61241-0:2006 EN 61241-1:2004

MiniPurge 介面單元 MIU/d 已通過分類，且應該標示為  II 2 GD

MiniPurge 介面單元 MIU/d 系統是根據驗證機構第 0518 號 SIRA Certification Service 所發布，製程品質保證公告的 SIRA 99 ATEX M043 所製造。



John Paul de Beer
常務董事

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機密評估檔案參考 SC009